PHARMAKO POEIA

POWER PLANTS, POISONS & HERBCRAFT

DALE PENDELL

Foreword by Gary Snyder

$35.00

This is the first volume of North Atlantic Books' hardcover edition of Dale Pendell's *Pharmako* trilogy, an encyclopedic study of the history and uses of psychoactive plants and related synthetics first published between 1995 and 2005. The books form an interrelated suite of works that provide the reader with a unique, reliable, and often personal immersion in this medically, culturally, and spiritually fascinating subject. All three books are beautifully designed and illustrated, and are written with unparalleled authority, erudition, playfulness, and range.

Pharmako/Poeia: Plant Powers, Poisons, and Herbcraft focuses on familiar psychoactive plant-derived substances and related synthetics, ranging from the licit (tobacco, alcohol) to the illicit (cannabis, opium) and the exotic (absinthe, salvia divinorum, nitrous oxide). Each substance is explored in detail, not only with information on its history, pharmacology, preparation, and cultural and esoteric correspondences, but also the subtleties of each plant's effect on consciousness in a way that only poets can do. The whole concoction is sprinkled with abundant quotations from famous writers, creating a literary brew as intoxicating as its subject.

The *Pharmako* series is continued in *Pharmako/Dynamis* (focusing on stimulants and empathogens) and *Pharmako/Gnosis* (which addresses psychedelics and shamanic plants).

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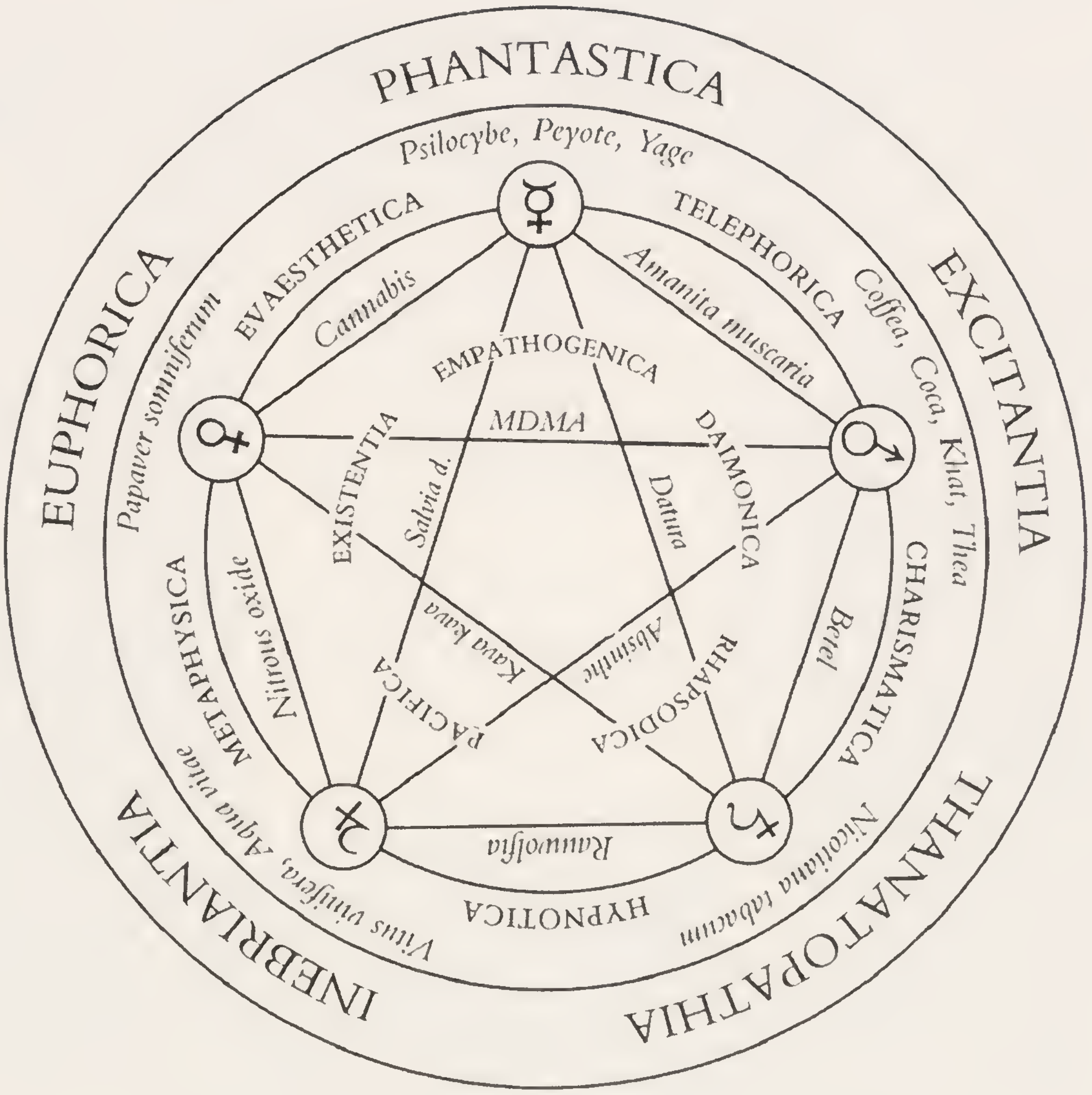
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Psilocybe, Peyote, Yage
EXCITANTIA
Coffea, Coca, Khat, Thea
THANATOPATHIA
Nicotiana tabacum
INEBRIANTIA
Vitus vinifera, Aqua vitae
EUPHORICA
Papaver somniferum
EVAESTHETICA
Cannabis
TELEPHORICA
Amanita muscaria
CHARISMATICA
Betel
HYPNOTICA
Rauwolfia
METAPHYSICA
Nitrous oxide
EMPATHOGENICA
MDMA
DAIMONICA
Datura
RHAPSODICA
Absinthe
PACIFICA
Kava kava
EXISTENTIA
Salvia d.
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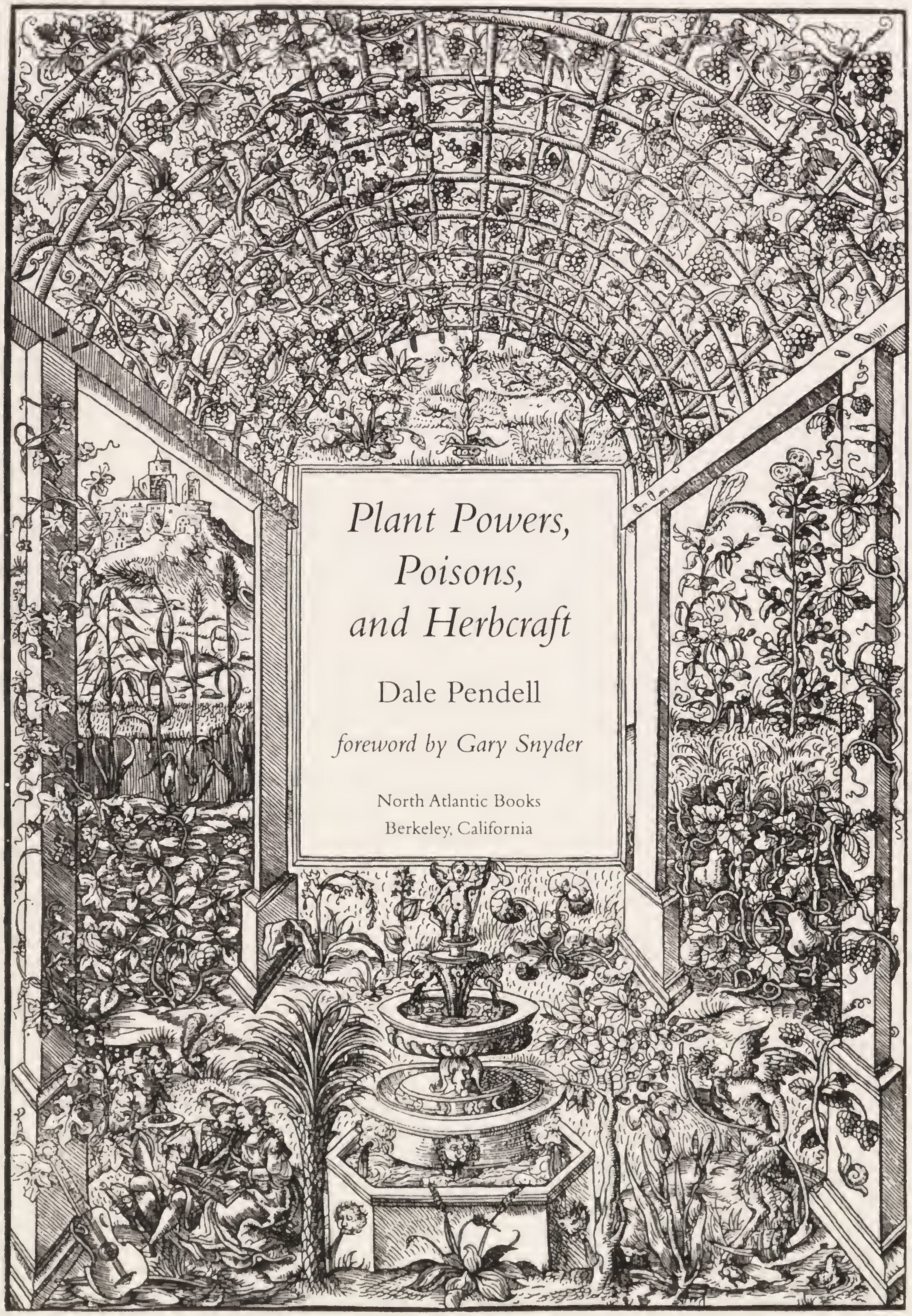
PHARMAKOPOEIA



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North Atlantic Books
Berkeley, California

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Publisher's Note: A manuscript draft of *Pharmako/Poeia* caused us some concern. The author of this remarkable work was clearly exploring perilous terrain along his "Poison Path." This is a route we strongly advise others not to follow (except through this book, and through other approaches that lead in the direction of wisdom without dangerous self-experimentation).

Did we detect a tongue-in-cheek quality in the manuscript? We could see the depth of botanical knowledge, the extensive scholarly research, the learning, the results of years of alchemical practice and dedicated experience, the poetic beauty, the ingenuity of subtly shifting interior dialogues, the peculiar fascination of strange, beguiling perspectives, the dark wizardry of its authorial persona (wise but not without a hint of menace)...

Pharmako/Poeia makes a contribution to modern poetics and cross-disciplinary study, in the distinguished tradition of the botanical herbal (the tradition launched by Dioscorides in classical times, which reached perhaps its finest flourishing in the early Renaissance); this tradition has influenced our physical presentation of the material.

CAUTION:
This book is an exploration of the "Poison Path." All of the plant substances described in it act on the human body as drugs and thereby as poisons. In many cases there are known and there may also be unknown health hazards involved in their use. The publisher and the author recommend that dangerous or illegal practices be avoided.

This is a literary work that takes as its subject the relation that has existed throughout the world since ancient times between "power plants" and shamanic and literary creation. The authorial voice that appears in it should be considered a fictional persona. The inclusion of recipes, preparations, or dosages is an expression of that fictional voice, and should not be regarded as actual recommendations for usage.

Neither the publisher nor the author assume any liability for unwise or unsafe actions by readers of this book.

This book is dedicated to
Isaac Black Elk Goodkind
1970–1993
his friends and his generation

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THE BISHOP OF FOOLS WITH HIS BAUBLE

FOREWORD BY GARY SNYDER

This is a book about plants. Green, sweet, peaceful plants: the harmless beings who give us flowers, nuts, fruits, roots, sap, bark, fiber, and shade. But some aren't so great to eat – sour, bitter, or worse. Plants are all chemists, tirelessly assembling the molecules of the world, and in their transactions with insects, birds, animals, and fungi, they find elaborate ways to defend themselves, to seduce pollinators, to confuse. So it's a book about the interplay of plants, insects, animals, and humans, and suggests a bit how toxins shaped ecological systems. How much we assume about plants, and how little we know them! Pendell playfully says, "Only plants had consciousness. Animals got it from them."

It's a book about people, the plant-women and -men who for millennia investigated the properties of plants and learned to use them for healing, for their effects on the mind, for poisons. These ancient experts and traditional professionals knew and kept plant secrets close for generations. It's a book about knowledge, and secrets.

In recent centuries those who knew plants and their powers have often been stigmatized, as though danger and unpredictability were of themselves evil. This is a book about human cultures, and how those which demonize death or pain or sickness are thus less able to deal with the bitter side of nature, with intoxications; and make themselves doubly sick.

The Buddha taught that all life is suffering. We might also say that life, being both attractive and constantly dangerous, is intoxicating and ultimately toxic. Cupid shoots an arrow which strikes and changes you forever; love is toxic. "Toxic" comes from *toxicon*, Pendell tells us, with a root meaning of "a poisoned arrow." All organic life is struck by the arrows of real and psychic poisons. This is understood by any true, that is to say, not self-deluding, spiritual path.

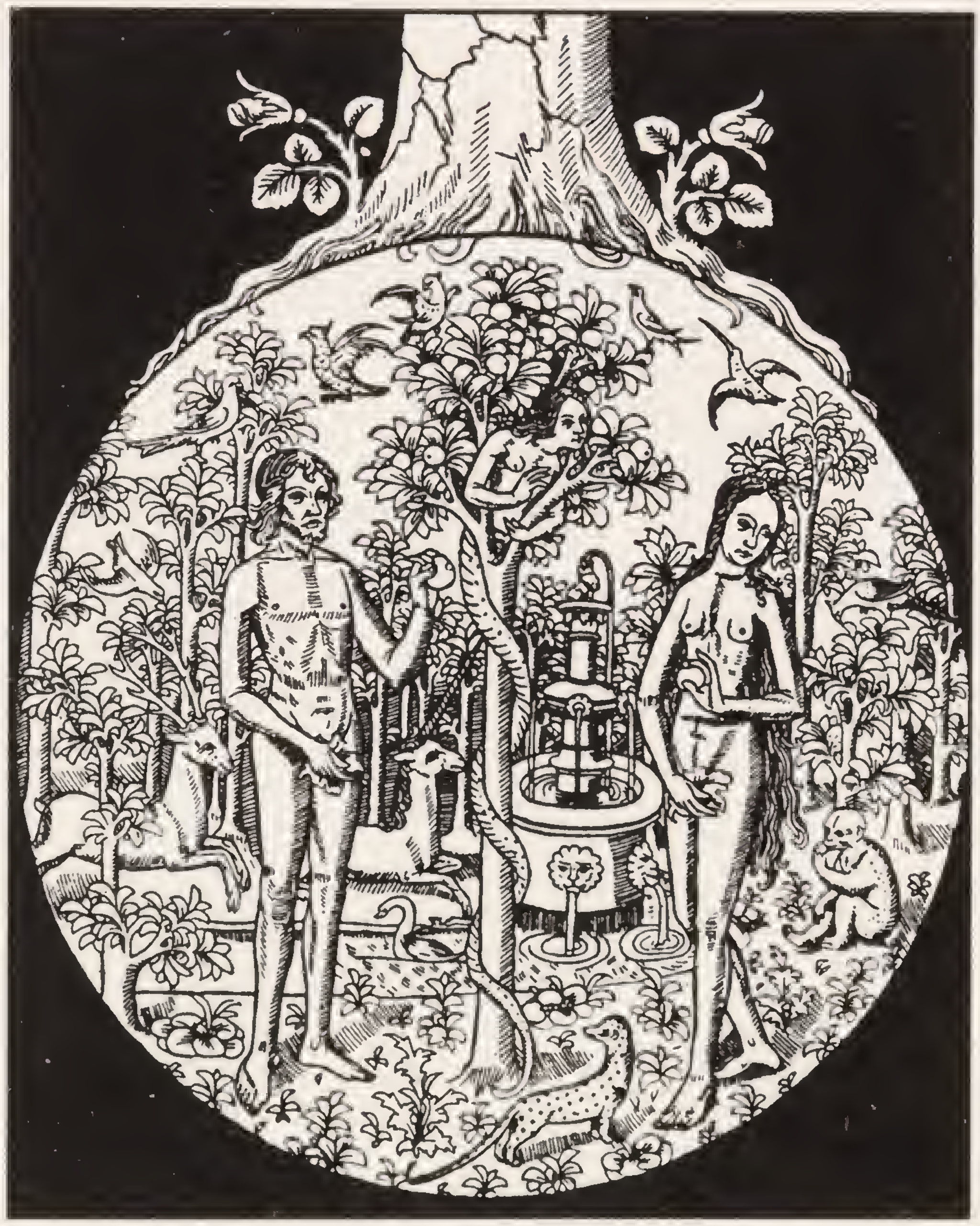
So Pendell speaks of the "way of poisons." This way (modern and ancient shamanism and herbcraft, verging into ethnobotany and ethnopharmacology) has developed a remarkable body of empirical and scientific knowledge to place against current official ignorance and resistance to the possibility of clear and courageous thinking about the many realms of drugs.

This is a book about danger: dangerous knowledge, even more dangerous ignorance, and dangerous temptations by the seductions of addictions both psychic and cellular. It is a book which requires that one not be titillated by romantic ideas of self-destruction. I hope and believe it will benefit human beings and the plant world too. It is not for everyone – but neither is mountaineering.

Pendell quotes William Blake, "poets are of the devil's party." Poets needless to say are not satanists, so what does Blake mean? I think he is saying that for those who are willing to explore the fullness of their imagination, their mind and senses, there are great risks – at the very least, of massive silliness. Farther out is madness. No joke. But forget about the devil; poets and such travelers also bring a certain sanity back home. Here is a look at half-understood truths and serious territories of remaining mystery. This is a book of imagination and poetry.

Industrial toxins and wastes are in the air and oceans, and buried and heaped up on the land. Our very food now seems suspect. "Better living through chemistry" was brought us by our own entrepreneurial and selectively regulatory societies. The developed world now has to work all these questions out, with vast environmental destruction as the stakes. Who indeed are the crazies of the twentieth century? We desperately need to understand the basics, of plants, of consciousness, of poisons. This book is a tentative map with scribbled reports by scouts from the territory beyond the ranges, and it aims for sanity.

– G.S.



THE ROOT OF EVIL

(hey!)

I hear you.

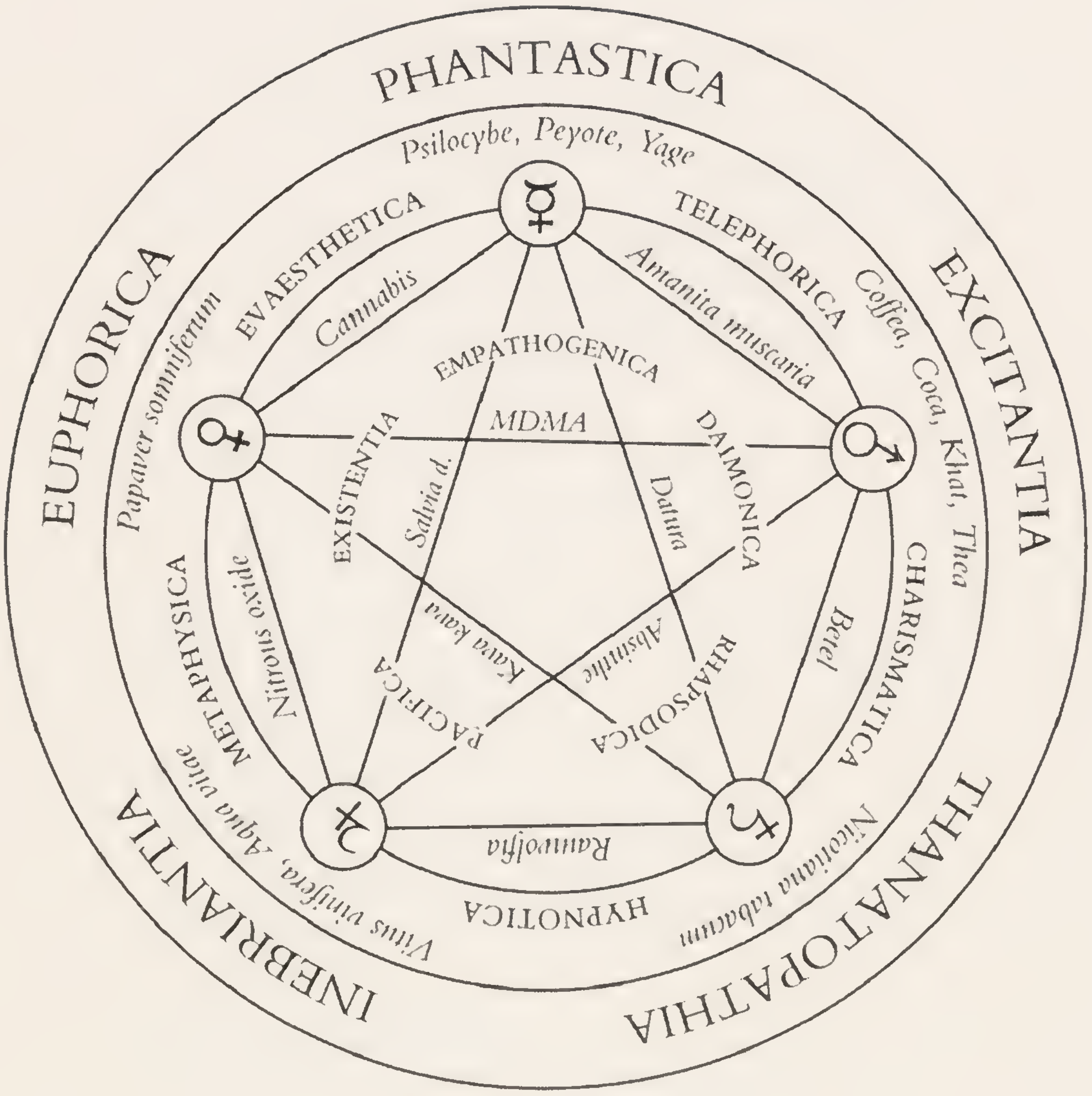
(any cops around?)

These are just words.

(yeah right . . .
any prospective
employers around?)

I don't want to hear this.

(then why did you call me?)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Kava kava
METAPHYSICA
Nitrous oxide
INEBRIANTIA
Vitus vinifera, Aqua vitae
HYPNOTICA
Rauwolfia
☿
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PHARMAKOPOEIA

BRING THEM ON, THE POWER PLANTS

All the palmate-leaved ones, the
pinnate, and the pinnatifid, the entire –
Rosy Hawaiian babies, wise Mazatec sages,
and the old Indian rope trick.
Come on, you indoles, you terpenes,
you alkaloids, you medicine plants.
Hello, star-eyed betel juice plants, Amazonian
vine plants, Chihuahuan cacti;
Come, blue-eyed witch plants; come you
dung-loving fun guys . . .

Come on, O rueful Syrians,
and all you thick-smelling
solanaceous plants;
You cultivated-in-rows tobacco and coca plants;
You maligned poppy plants and worshipped
grapevine plants –
All forgotten plants, and fad plants:
Come forth, you motley troop –
not a gentleman among you –
Not one that won't lie, cheat, or swindle
a ride –
Come, all ye ruffians:
Be fruitful, we have need of poison.

POWER PLANTS

ON THE NATURE OF POISON

In poison there is physic.
– Shakespeare, 2 Henry IV

Our way is the way of poisons. Mercury,
the poisonous changeling.

MERCURY

Some plants
like to lap up to you, doglike.
Others hit you like a mallet.

Once they get in you, they've got you. From then on, the plant-poison is part of you.

Our way is the way of poison. If you want sacredness, highly evolved consciousness, spiritual magnificence, holiness, sweetness, beauty, and truth,

GOOD!
Aspiration is halfway-there.

But our way is the way of poison. The path of sulphur.

Everything is poison, nothing is poison.
– Paracelsus

SULPHUR

The old doctors were called poisoners.
They were the *lucky* ones. Still today, we will
say to someone, *Good luck.*

Your luck is your power, your poison.

And some lucky people do the bad stuff.

And a lot of doctoring, if you are good, is undoing
the mess
left by
the bad shamans.

The bad shamans . . . their weapon
is the Lie. Sometimes the lies are like arrows
that go in easily but are very difficult
to pull out.

Sometimes bad shamans who poisoned for money had to be tolerated, as they were often the only recourse for a person struck by a "dart." Sometimes the doctors who wore animal skins, like maybe grizzly bear skins, got too mean. Then the people would have to get together and kill the bad doctor. Sometimes those bad ones were weeded out in the apprenticeship process.

> *Blind Hall called his medicine "my poison." The Indian word is "damaagome." Some Indians translate it in English as "medicine" or "power," sometimes "dog" (in the sense of pet dog, or trained dog).*
>
> *– Jaime de Angulo, Indians in Overalls*

For our purposes, it is enough to get over thinking "good" and "not good" and to proceed with a scientific, that is to say, poetical, investigation.

> *Let the lover of God understand us right; we do not go upon an historical heathenish conjecture, nor only upon the light of the outward nature; both suns shine to us.*
>
> *– Jacob Böhme, Signatura Rerum*

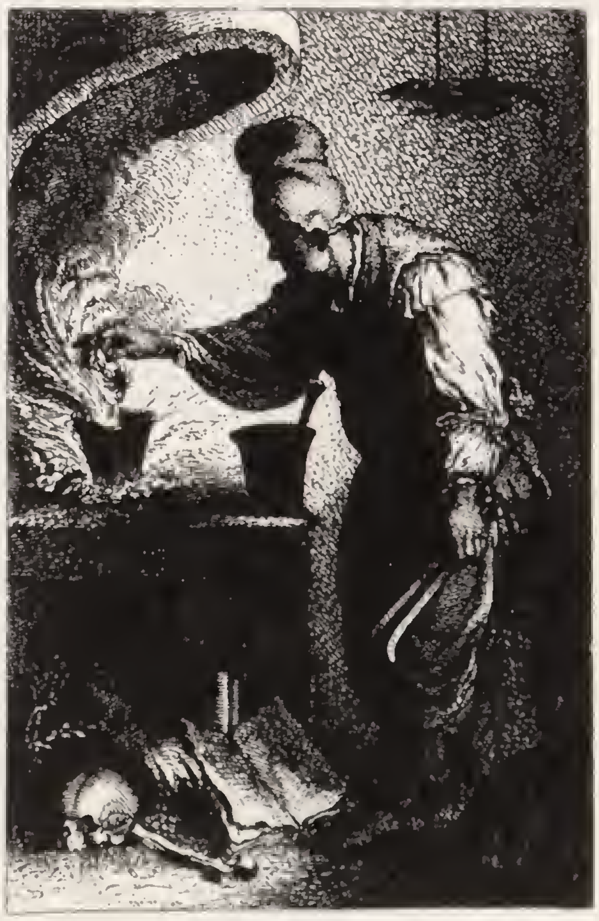
Start with poison, your own:
a black drip,
oily and shimmering;

start with poison and let it ferment.

(Put poison on poison. Can you poison poison?
There, in the place where seeds sprout.)

Better to start
with poison your own
than all the laurels of your
friends or dreams –
the first settles accounts,
the latter compounds note.

> *In a toad, viper, or adder, or the like poisonful beasts, worms, or insects, the highest tincture is to be found, if they are reduced to an oily substance, and the wrath of Mercury separated from them; for all life, both external and internal, consists in poison and light . . . all life that is void of the poisonful Mercury is mort, and an abominate, and accounted as dead.*
>
> *– Jacob Böhme, Signatura Rerum*



THE ALCHEMIST, MARTIN JOHANN SCHMIDT, 18TH C.

No need to mistake any of this for spiritual practice.

(Come, my poisons . . .

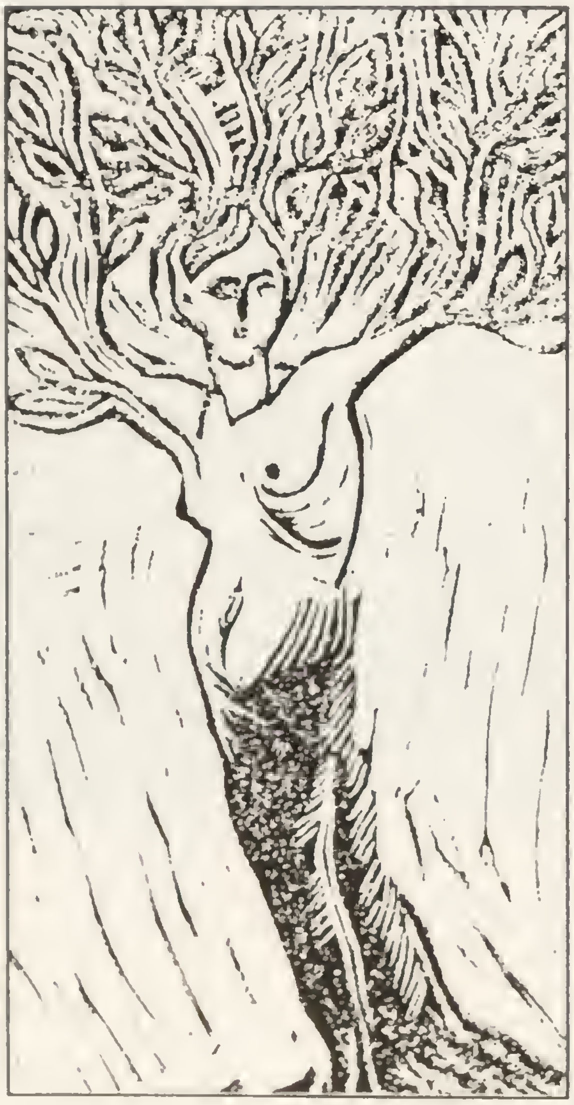
PLANT PEOPLE

To follow the Way of Poisons, it is essential to learn about plants. As you learn about plants, you will, by the by, meet *plant people.*

Be clear now: most of the plant people you meet are not on the Poison Path, but all the plant people are teachers, nonetheless. They are doctors, though the doctoring of some of them is most subtle.

Almost every gardener is a plant person, as are botanists and horticulturists. Some existentialists are not plant people.

> *I am afraid of cities. But you mustn't leave them. If you go too far you come up against the vegetation belt. Vegetation has crawled for miles towards the cities. It is waiting. Once the city is dead, the vegetation will cover it, will climb over the stones, grip them, search them, make them burst with its long black pincers; it will blind the holes and let its green paws hang over everything.*
>
> – *Jean-Paul Sartre, Nausea*

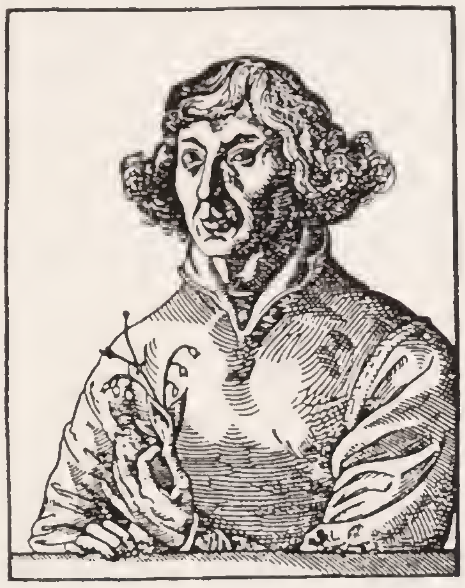


DAPHNE, JACQUELINE BELLON

And, despite the sprouting of fractal ferns and algorithmic roses, there are no plants in cyberspace – not that one could eat, anyway. Nor in the noosphere.

We offer a simple test for otherworldly explorations: are there plants in the realm? And if there are, what is their status? And we wonder if the status of plants, as representatives of the Other, may not have resonance with the status of other minorities – religious minorities, ethnic minorities, mammalian minorities – and perhaps with the status of women.

Some realms are filled with plants. Adonis was born right out of the trunk of a myrrh tree. Buddha, according to tradition, had his enlightenment beneath a tree, and his mother, Maya, is portrayed holding on to the branch of the sacred sal tree as she gives birth. And Jesus, though he once cursed a fig tree to death because it was out of season, died on a tree. That counts for something, in the world of plants. Remember that Socrates once bragged to Phaedrus that he had nothing to learn from the plants of the countryside, and how he was forced to swallow more than his words. That George Washington was said to have chopped down a cherry tree will make more sense in the section on the Mad River plant.



NICOLAS COPERNICUS

In the old times it was not unusual for people to be turned into plants. The old plant doctors knew those stories. The old doctors talked to the plants directly. They knew. That this tree was a girl, that that flower had been a boy. Such things are still true.

In natural, inhabitory societies everyone is a plant person. Sure, there are exceptions – the Eskimos lived entirely by eating other souls – but those are exceptions. To walk through the Amazonian forest with the Waorani- or the Quichua-speaking peoples is to be deluged with plant lore: with names, uses, and legends about plant after plant after tree passing by.

There are those who believe we can live without plants. There is thus some urgency to our task.

A bulldozer grinding and slobbering
Sideslipping and belching on top of
The skinned-up bodies of still-live bushes
In the pay of a man
From town.

– Gary Snyder, "Front Lines"

I've met plant people in most unplantlike places. One was chief executive officer of a computer corporation. And the noted mycologist Gordon Wasson (who never, incidentally, accepted Keynesian economic theory) was vice president of the J. P. Morgan Trust. Some plant people end up as professionals: as botanists, ethnobotanists, farmers, landscapers. Some plant people change their names to plant names: like Yerba Santa, the spinner and jeweler; or Red Pine, the poet and translator; or Ponderosa Pine, the naturalist. One of poet Gary Snyder's most important books (from which the lines above were quoted) is called *Manzanita.* Robert Aitken, a Zen *roshi* in the Sanbo Kyodan lineage, wrote a book about Zen and ethics called *The Mind of Clover.* D. H. Lawrence titled a book of poetry *Pansies.*

Plant people have a way of being invisible, of blending perfectly with the landscape, or of being visible only to other plant people. Our Way, however, is not about being a plant person. Ours is the Poison Path.

Watching gardeners label their plants
I vow with all beings
to practice the old horticulture
and let plants identify me.

– Robert Aitken, The Dragon Who Never Sleeps

PLANTS AS TEACHERS

Every plant is a teacher,
but as in every crowd,
there are always
a few loudmouths.

Along the upper Amazon at the base of the Andes, in the Oriente of Ecuador, there are *yachaqs* who learn shamanism directly from the *doctores,* the plant teachers. These *yachaqs* are also called *vegetalistas*. There are other kinds of shamans, seers, and healers in that watershed who are not *vegetalistas* – *yachaqs* who are spirit mediums, or who work with dowsing, or with spells – but the *vegetalistas* are the plant specialists.

Vegetalistas differ in their opinions as to which plants ought to be studied first, which last, even which plants to use as teachers at all. Some *vegetalistas* use only one plant, like tobacco, while others have intercourse with three or four. Some may maintain relations with as many as a dozen, but as there are many more than a dozen possible power plants, even in localized regions, it is clear that different doctors are going to have different teachers and different methods.

Often, it's true, shamanism runs in families or clans, and it is not unusual for shamans who are related by blood or marriage to share lore or plants. But every true *vegetalista* has to meet *Sacha Runa,* the Forest Person, face to face. In the jungle.

Sacha Runa is like us, except that he lives in the forest.
Sacha Runa is the one who takes care of the animals –
the one who lets them out in the morning.

By jungle I really mean primary forest – forest that hasn't been cleared – that's where Sacha Runa lives. And it's through Sacha Runa that one is introduced to the plant teachers, the *doctoritos*. Sometimes Sacha Runa will come out from behind a ceibo tree and say hello to a person who wasn't even looking for him. But not usually. Usually one has to fast, purify oneself, maintain a strict diet of no salt or domestic meat, and go out into the forest and wait for him, sometimes a long time. I said *him*, but more likely the forest person will be *her*, unless you are female yourself.

Jaguar, crocodile,
anaconda, puma.

Oftentimes the Forest Woman, *Sacha Huarmi,* will appear in the form of a relative, and if you don't know what you are doing, you will just say "Hello," or "What a surprise to see you here," and go on your way. If you do that you may have lost your chance. Or maybe Sacha Huarmi will look like a friend or an old acquaintance, or, as I once heard from a young *vegetalista,* like a beautiful green-skinned, green-eyed, green-haired woman.

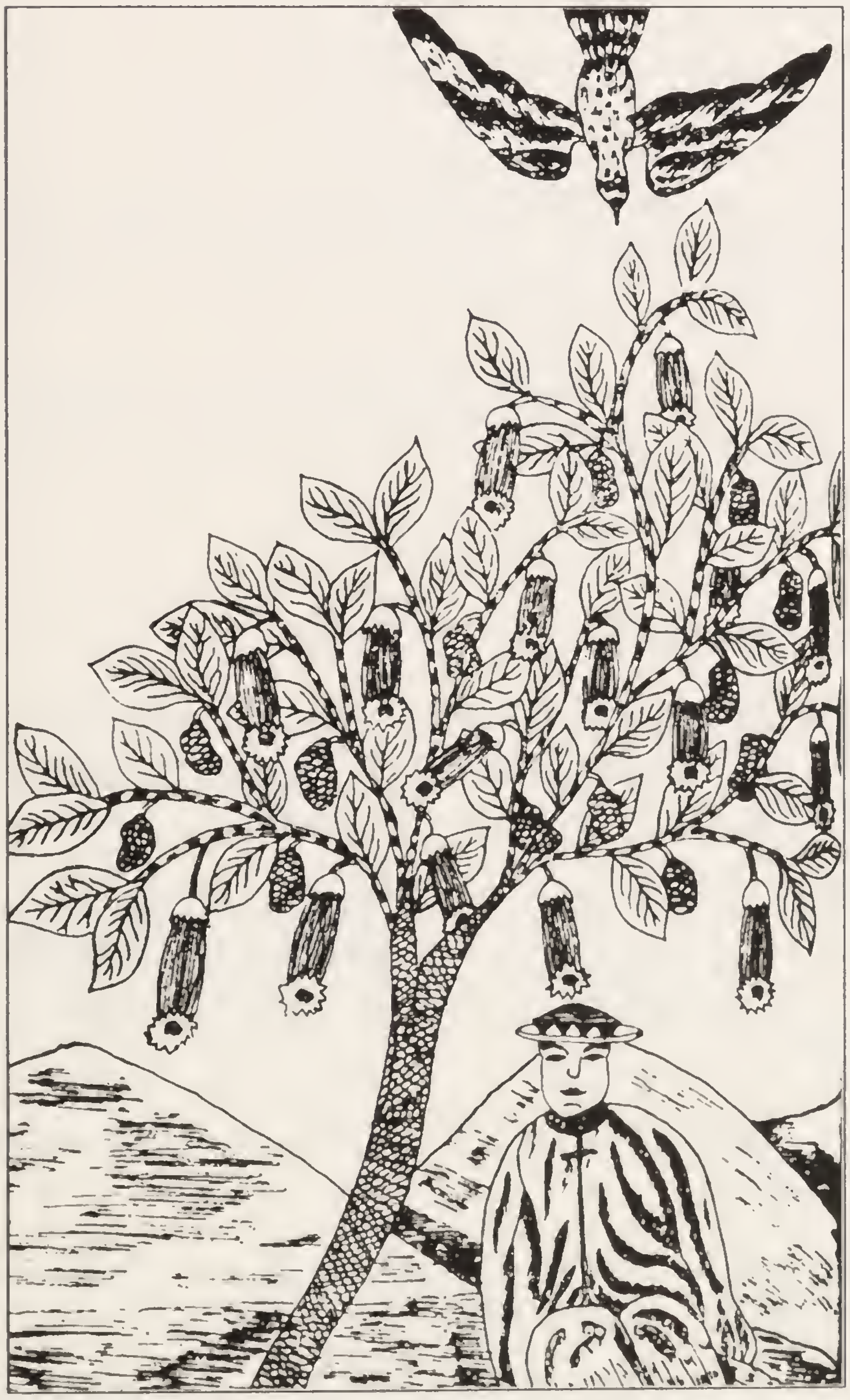
Sometimes the forest person will be sitting in a chair that is really an anaconda, and will ask you if you want to learn. If this happens, just say yes.

A brilliant macaw headdress, nine
necklaces of toucan feathers,
twelve bracelets she wears,
a skirt woven of bark, a feathered lance –
a new blowgun, perhaps, for you, and perhaps
a little iron pot filled with medicines . . .

The forest person will scrutinize you closely. Maybe she will sniff you. Maybe not. But she will size you up, that's for sure. Sacha Huarmi wants to see if you are *complete*, if you have the fiber to see the training through to the end.

Maybe you have not kept the diet and you will be too afraid. That's OK, you can probably get another chance. If you still want to! If you pass, Sacha Runa will clean you with a bundle of *sutu panga* leaves. Then she will give you some handy stuff, like a couple of soldiers perhaps, for protection, and then she will begin the teaching by giving you a plant, and a song.

And more, but we'll get to that.



GUAMBIANO INDIAN DRAWING, SOUTHERN COLOMBIA

ON THE NATURE OF THE ALLY

There are many dimensions in alliance space, and the pharmacological axis is only one of many. The old doctors had helpers like

mountain lion, owl.

Maybe the power plant was a conduit, or a call, a sort of whistle. Or the plant was like a delivery service. Not like the plant itself was the ally.

maybe the ally lived in the plant,
or maybe the ally lived in the next world, and the
plant was like a bridge . . .

That plants have *virtues*, or "vertues," was known by the ancient herbalists. The virtue of a plant was its truth, its strength. Maybe the best synonym is *integrity*. Or power. Or poison.

And we see how plants are used. If a patient is suffering from heat in the spine, the herbalist will find an herb with a poison that effects exactly those same symptoms and give the patient *a small amount* of that herb.

Similia similibus curantur.

Fighting fire with fire. Thus we have *homeopathy*.

Or a *curandero* applies a particular plant to a skin rash, not because the plant causes a similar rash, but because the juice of the plant alleviates the condition. Maybe the rash is caused by a fungus and the plant contains an herbicide. This is *allopathy*.

And there is another kind of medicine distinct from either of the above. This is the kind of medicine taken by the doctor, not by the patient. Let's ignore the advice of a great poet and make up a word for this kind of healing, *iatropathy*. Here we are in the realm of the *ally*.

The ally is the one who helps you. That is what an ally should do. Allies assist each other in the prosecution of some task.

Allies may also have agendas of their own, however. That is, an ally is not like a fairy-godmother, but is a powerful force in its own right.

An ally is like a half-broken horse, a horse with spirit. A horse that will carry you many days, only to suddenly knock you off on a low branch. Some allies are the subtle type. Maybe you have an ayahuasca ally. She is friendly. She gives you things. She doesn't seem at all malevolent. Or maybe you have an opium ally. She is more than friendly. She'll call you up and invite you over. And she is voluptuous, so you go. She is so good to you it seems like heaven. You get what I mean.

> *The Goddess brought them inside, bade them sit down, and mixed for them a potion of ground barley, cheese, pale honey, and Pramneian wine, but added to the mixture the medicines of gloom, that make one utterly forget his true home.*
>
> – *Homer, Odyssey*

But if the ally did not have power, why would you be interested?

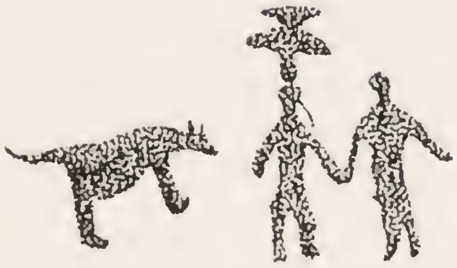
Killers:
a damn lot of them –

Allies live in the wilderness. That is a good place to find them. Don't get hung up looking for jaguars: mountains can be allies, rain is an ally, minerals are allies. Some are more active and some are more passive. Some you can trust, with some you need to parley; some are so powerful it doesn't matter whether you trust them or not. Go alone.

i will go to the mountain to-night!
he will come, he will come!
he will scare me.

– *Jaime de Angulo*

We grew up with plant poisons. That plant poisons resemble the chemicals of our own nervous system is not a coincidence. We selected each other – fought great battles on microbial slimes – traded partners and parasites in a primordial orgy.


SIBERIAN PETROGLYPH

We become trackers, threading through a labyrinth of rocks,
plasma, toxic saps. Nucleic acids,
like a sexual differentiation: iron versus magnesium,
chitin versus cellulose, tracking backwards.
High up in the cliffs find a niche,
wait, fast, find
traces of ochre fading on the sandstone.
Paintings on rocks, yerba santa thick in the air.

It had many legs. It had two heads.

Once you have an ally, you have to be able to talk to it. Usually an ally understands what you what to know, but it is best to be specific. Sometimes an ally will tell you something that you need to know more than what you asked about. Sometimes it is not pleasant.

> *Name the voices. Don't be judgmental. Be ready to make deals. Try to get something for yourself.*

They never give anything for free. None of them do, not the most wholly and thoroughly benevolent, not the sun itself.

> *You think that you can write about this!*

Yes.

> *[Laughter]*

If I have to turn my back on you I will do it.

> *Let's talk about your job.*

OK.

> *Bringing it home a little bit, aren't you?*

Look around you!

> *If this is supposed to be your office, make it at least look like work gets done here.*

Right. Guess I screwed up at that meeting today.

> *No. Stop worrying. Your style is not going to bother them. They don't want some dumbshit, they want you.*

Yeah.

> *One last thing. Don't you think that telling the world about your ally is a little like telling your wife about an affair?*

The ally says that it would be wise to come see her from time to time. Like once a week to once a month. And especially when decisions are involved.

But then an ally WOULD say that, wouldn't she? How can you trust her?

Some doctors find their ally ever close at hand. As natural and as intimate as their own breathing.

PRUNUS EMARGINATA

Common Names Bitter cherry, the Mad River plant.

Related Species *Prunus serotina,* wild cherry; *Prunus virginiana,* chokecherry; *Prunus ilicifolia,* holly-leaved cherry.

Taxonomy Rose family.

Part Used Leaves, dried stem bark.

Pharmacognosy The chemistry of *Prunus emarginata* is not well studied, but probably is similar to *Prunus serotina*, wild cherry. The presence of cyanide is a likely possibility, so do not ingest the leaves!

Wild cherry, *Prunus serotina*, contains a cyanogenic glycoside called prunasin, which is formed by the partial hydrolysis of amygdalin, common throughout the genus, especially in the almonds. The hydrocyanic acid (HCN) content varies from up to 0.32 percent in the inner bark to practically zero in the trunk bark. The cyanide content seems to depend on the amount of photosynthesis associated with a specific area of bark, the greener areas being much higher in cyanide than the reddish or brown areas. This is significant in that the stems of *Prunus emarginata* are uniformly a deep reddish brown.

Enzymes must act on the glycosides to release the cyanide. In the leaves, this apparently occurs when they wilt or, more importantly, when in the alimentary canal of an animal or a person. Very little HCN remains in leaves that have been dried, however. So while it is possible that pyrolation releases HCN, it seems equally likely that the effects observed through bioassay are due to an as yet unidentified principle.

How Taken Leaves are stripped from the branchlets and allowed to dry in the air. A few dried leaves are crushed and smoked in a small pipe. A lungful or two is enough.

Smoking the dried leaves was my idea. At Hoopa in northwestern California, the Indians take strips of dried bark in a tea, or keep them directly on the tongue, as a medicinal tonic similar to wild cherry.

Effects Sedative, without diminishing mental alertness. Or mental stimulant, without bodily agitation.

Prunus serotina, wild cherry, is well known in syrups, where it is considered to be a sedative and an expectorant.

The Ally The Mad River ally is for impatient artists, for those whose muse pulls them in so many directions at once that they are unable to sit still and actually get something done.

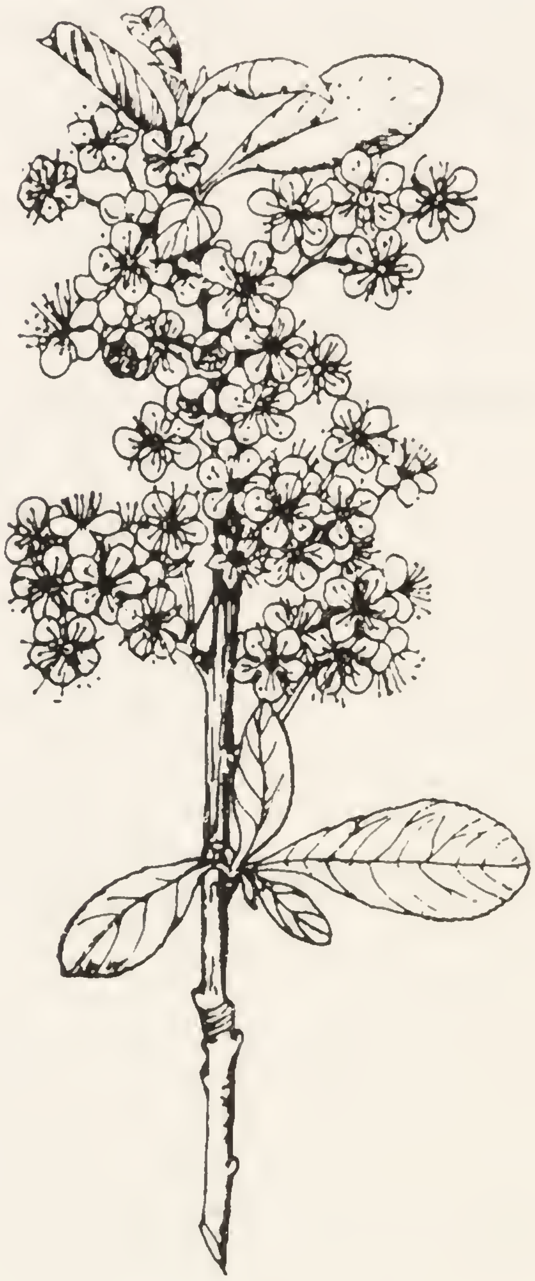
While the Mad River plant does not produce true euphoria, of pleasanter smokes there be not many.

The Plant I learned about this plant from a basket weaver at Hoopa. She was a plant person through collecting her basket-weaving materials as much as through herbalism. She had several native California plants growing around her home as medicinals, as well as a couple of exotics – one interesting palmate-leaved plant she called *Indian tobacco,* a name I had never before heard applied to this plant of a hundred names.

I had told her that I was looking for a plant to relax me, to calm my nerves, and she, after gazing at me for a while, told me about a plant that grew by the Mad River bridge in Humboldt County, California. She made a little drawing of the way the leaves grow on the twigs and told me I would know the plant by the bitter taste of the bark.

> *The bitterness, she said, that's how you know the medicine.*

This genus is best known, poison-wise, for the kernels in the pits. That is where the cyanide is the strongest. Laetrile come from the pits of apricots, another *Prunus* species. My Hoopa teacher told me that apricot pits were "only for shamans." I've never tried them.



PRUNUS EMARGINATA

In the Trinity Mountains I've found *Prunus emarginata* at 4,500 feet, but in the Sierra Nevada it is usually at higher elevations, above 6,000 feet. Sometimes it lives around mountain lakes, other times it is right up on the ridges. It has a distinctive heavy smell, almondy and sweet without being floral. Once you know it, you can detect the plants at some distance.

THE GREAT WORK

The Great Work is accomplished through the *Great Stone.*

Why settle for less?

The Great Stone is the *lapis philosophorum,* the wondrous stone of the Philosophers, and the Grail of our Quest. The stone is something you create, not something you find lying around. The Great Work consists of preparing the Great Stone and then applying it. It is the preparation of the stone that is crucial, alchemically. After all, stones are many, and easy to come by. The application of the stone is the last stage of the process and is called *reddening* by some alchemists and *yellowing* by others. As Paracelsus said, the Philosopher must develop the stone from potentiality into activity. Temper is important here. After the individual application there is the public, marketplace application. It is important not to neglect this political aspect of the process, as the political aspect will certainly not neglect you!

He with ears to hear, let him hear.

In traditional Western alchemy the elements are sulphur and quicksilver – sulphur, quicksilver, and salt forming the alchemical triad. (And the triad is Hegelian in the sense that salt feeds back into sulphur.) Sulphur is said to fix the breath, the spirit, the quicksilver part. Quicksilver, mercury, is *pneuma,* what the Taoists call *yin,* the solvent that dissolves away the fixed part, the sulphur, the part that is stuck. And the process is repetitive: it is like an alembic flask with the long neck bent around and joined to itself, so that the distillate returns to the boiling chamber. That is because sulphur has this fiery, insistent aspect that won't quite go away with any amount of mercury. (Don't try to disprove this!) So Jacob Böhme says:

> *Sulphur is in the outward world, viz., in the mystery of the great God's manifestation, the first mother of the creatures. . . . Mercury is the wheel of motion in the Sulphur.*
>
> – *Jacob Böhme, Signatura Rerum*

As for our mercury, never forget that though it is most essential for our work and much beloved, it contains a subtle poison. Both Böhme and Paracelsus agree on this point. Paracelsus adds that it is the work of the alchemist to separate the poison from the arcanum.

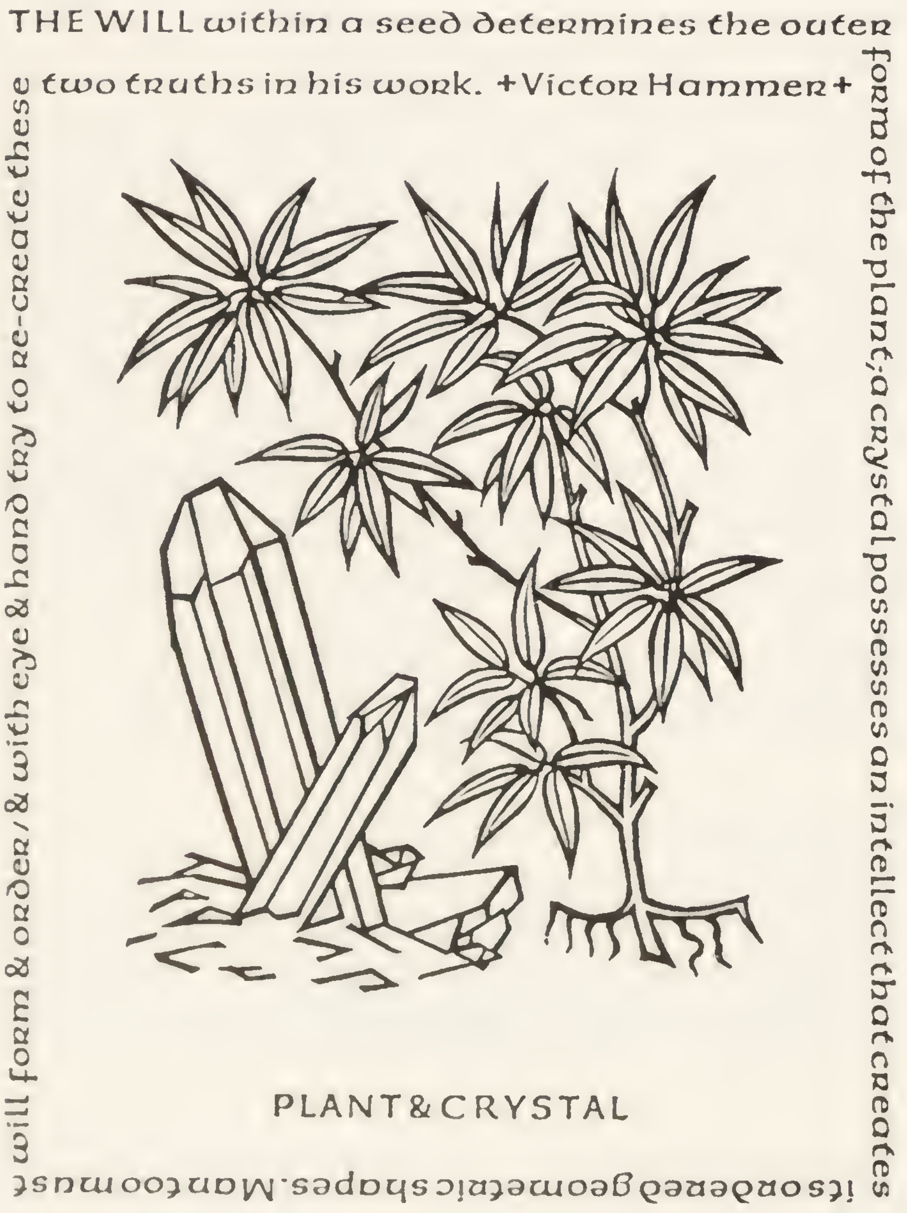
The poison attacks the fixed properties (themselves moribund poisons) and dissolves them. Poison is antidote and antidote poison. When everything fixed and dissoluble is dissolved, continued cooking yields the salt. Salt is the ash, the basic part, the Philosopher's Sal.

> *The Sal is what was there all along, the part you can't see until you get rid of everything else.*
>
> *It's your birthright.*

Geber called the raising of the dry matter, so that it collects and adheres in the head of its own flask, *sublimation.* Paracelsus said that sublimation is the single and only operation of the Work.

After your cooking, get rid of the salt. Perhaps with mercury. The salt is already tainted, has become something else, become something. There is not really any problem here. The salt takes on a yellow cast because the sulphur is self-engendering. And, as I say, that's not bad. The *process* is what's important, that the transmutation continue. If you let the alembic cool, metaphor becomes superstition.

> *Psychologists sometimes miss this point.*
> *Poets ought never.*


THE WILL within a seed determines the outer form of the plant; a crystal possesses an intellect that creates its ordered geometric shapes. Man too must will form & order / & with eye & hand try to re-create these two truths in his work. +Victor Hammer+
PLANT & CRYSTAL

WOODCUT BY VICTOR HAMMER, 1938

So what is the mercury, for a plant person? Well, there are so many levels. On one level it is the plant itself. On another level, mercury is the active principle. Then again, clearly, it is liquified consciousness. Or again, it is the *act,* or, more subtly, the *desire* that leads to the act. Now we can see the poisonous part.

In the corporeal realm, mercury is identified with blood and semen. Sulphur is the water in which they burn.

> *Sulphur is the womb whereinto we*
> *must enter, if we would be new born.*
>
> *– Jacob Böhme, Signatura Rerum*

So sulphur is the matrix, the *material.* That should be plain. Plain, if those alchemists didn't keep using the same word to mean different things in different sentences.

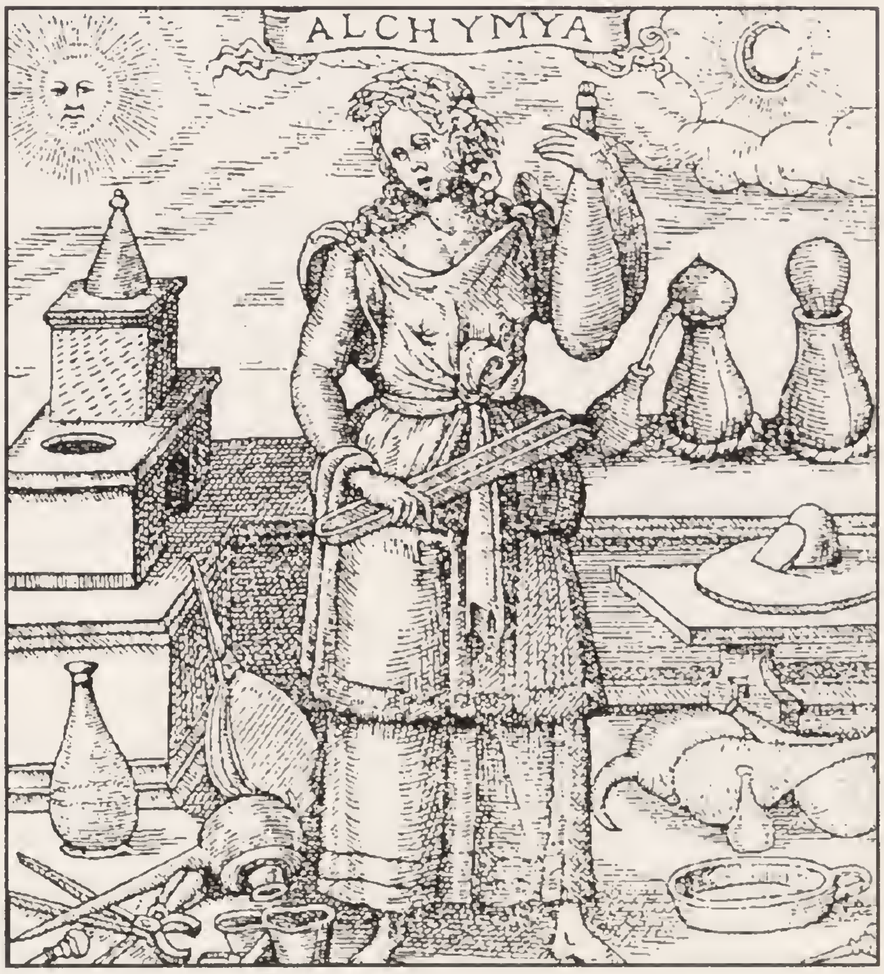
> *It happened that, meditating on things*
> *as they are, my mind beccoming sublime*
> *and my senses calmed, as one sated*
> *with pleasures or exhausted from*
> *fatigue, a being, of vast and boundless*
> *form, appeared before me and called*
> *my name and asked:*

"What is it you want to know? What is it you want to see?"

– Hermes Trismegistus, opening lines of Poimandres

Traditionally, the vegetable work has been considered inferior to the work on metals. There is perhaps some truth to this assertion, especially in regard to the work with *elementals,* as much as such relativism, well, is relevant. But alchemists working with metals can wander off as endlessly into involuted spirals as any *vegetalista,* as history attests. At least in the vegetable work there is a connection to the earth as fertility and life – while the mineral work is subterranean, rooted beneath the deepest mines. I'm of course speaking vulgarly here. Nonetheless, for the purist, I have attempted to maintain alchemical correspondences.

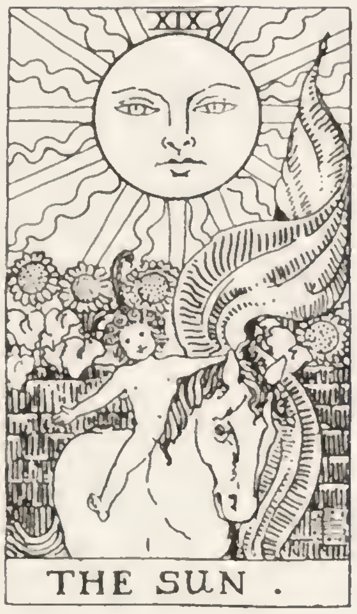
Become one with the work.
The true alchemist is no
different from the
work itself.



THE ROYAL ART

SUN MEDICINE / MOON MEDICINE

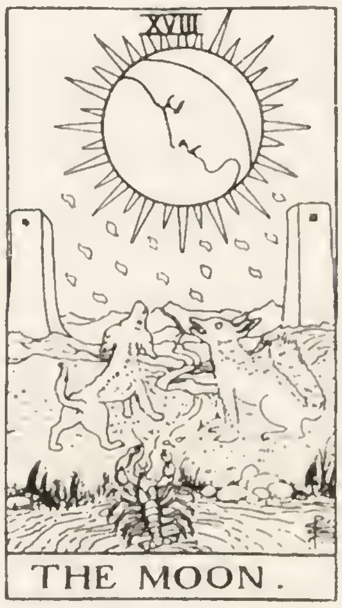
On the Poison Path we speak of *sun medicine* and *moon medicine.* And likewise then, there are *sun doctors* and *moon doctors.* For the Great Work neither can be neglected.



> *The life of man is governed by the rhythm of sun and moon. Sun and moon, therefore, became the first symbols under which the human mind tried to understand the universe in which man lived.*
>
> – *Lama Anagarika Govinda, Psycho-cosmic Symbolism of the Buddhist Stupa*

The sun doctor moves easily through the world, unperturbed, seemingly able to open doors anywhere she wishes. A life filled with routines and good health, with attendence to detail and reliability, the sun doctor knows where she stands.

The moon doctor has no need for ground. Realities scatter before him like tarot cards in the wind. He flies to the stars and has his way with the Queen of Heaven in her celestial palace. The moon doctor rides dragons and knows the way through hell. The sun doctor knows how to stay out of hell, and does. To the sun doctor every day is unique, every day happens for the first time. To the moon doctor there are no days. He lives in one instant only, eternally preparing the lunar medicine.



In both the solar and the lunar practices, the medicine comes from the salt. You begin with sulphur and prepare the salt with quicksilver.

> *As concise a summation of alchemy as you're likely to hear, I daresay.*

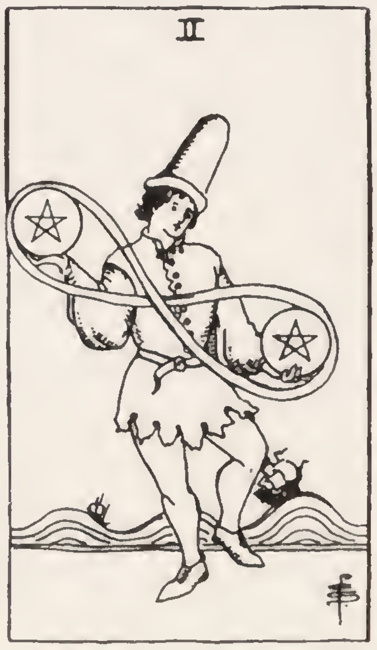
For poisoners, for the vegetable work, it is most important to have strong sun medicine. Strong sun medicine will allow you to go further in the night – will act as an anchor and a beacon in the realms beyond Arcturus – might save you, even, from an ignoble rebirth. Sometimes it is easier to leave one's body than it is to find it again.

Solar medicine is evident. You can spot it in a person's stance and posture. In style, the sun doctor is conventional or outlandish, but if outlandish, precisely so. Lunar medicine is more subtle. Moon doctors survive where others succumb. In jewels or in rags, or naked and covered with ashes, they will eat worms or a road kill, if worms or a road kill are what is served for dinner. Some say that for the lunar master, solar medicine is unimportant. But not so. You need both of them, together.

> *There are two great Bodhisattvas in this country. The name of one is Radiance of the Sun, and that of the other Radiance of the Moon. . . . They guard the treasury of the right doctrine of this Master of Healing, Azure Radiance Tathagata.*
>
> *– Bhaishajyaguru Vaiduryaprabha Tathagata, Sutra of the Lord of Healing*

Solar sulphur burns, a star with legs. Carbohydrates blossom into oxides: long life, health. Architects plan the City of the Sun; robots roam the earth.

In the lunar realm, sulphur moistens, genitals engorge. The poisonous sulphur struggles with its own inertia. Corporeally, the body lusts. But the static tendency is more like a Pythagorean dodecahedron than like, say, a pencil or any mineral crystal, or any piece of living flesh.



Sulphur is the fixer,
Mercury the trickster.

Solar mercury involves chance, lunar mercury seeks luck. In the solar mercury we find *God's Will,* in the lunar mercury a sorcerer.

The Two of Pentacles. Strength. The Magus

The solar mercury is a tragedian, the lunar mercury wears motley. The lunar mercury dissolves immensities – it is yoga, not philosophy. Mind, body, thoughts, and desires blow away in a whirlwind orgy.

All quicksilver confounds and destroys – it poisons the finest artifice – but it also sustains. It is the rhythm of the blood and the diaphragm, the Universal Solvent that slowly precipitates the lunar salt. Lunar salt is the mark of the Work, recognized by what is absent rather than by what is achieved.

> *Its father is the Sun and its mother is the Moon. The Wind carries it in its belly. Its nurse is the earth.*
>
> *– Hermes Trismegistus, Precepts*

As quicksilver contains the seed of sulphur, and sulphur the seed of quicksilver, solar medicine is partly lunar, and lunar partly solar.

In the absence of Sol, Luna thins.

Sun medicine without moon medicine wreaks havoc on the earth. What is the H-bomb but solar fire stripped of matter?

Radiolarian? Mountain asters? That great flower, so weary of time?

The pure moon doctor is the sorcerer, the necromancer. Slimy and spineless, moon doctors steal to get by. They blow fetid life into old myths and sell them as cures. With hollow eye sockets, they feed on fear, lurkers on the threshold of life. Sometimes they write books. Lunar/solar: one deals in dreams, one meddles in matters; which is the ranker poison?

Let the rain wash away the salt.

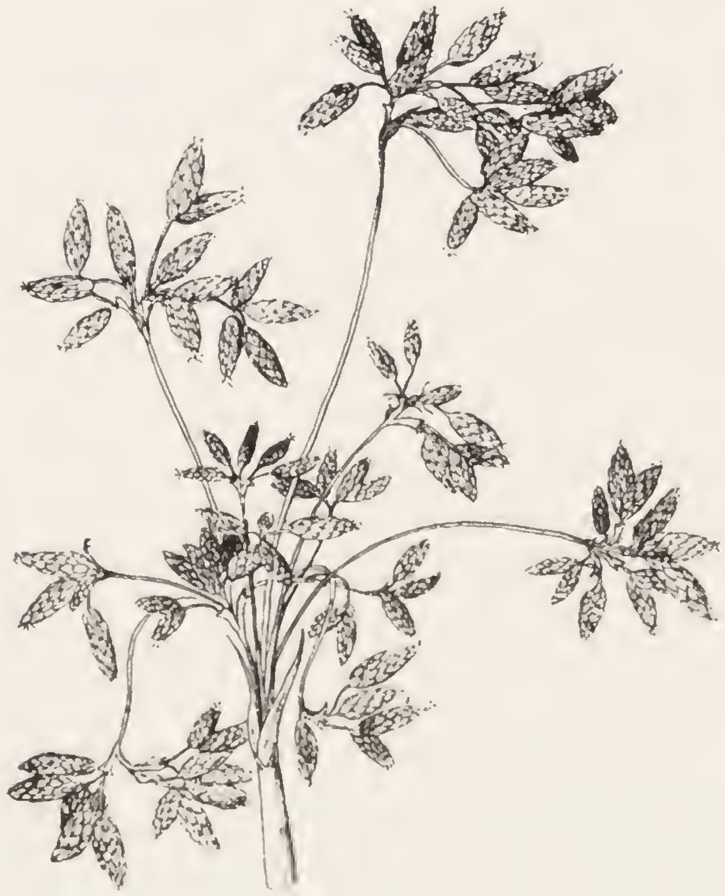
In the vegetable work, solar alchemy is associated with carbohydrates and free oxygen, while the lunar alchemy is associated with nitrogen and carbon dioxide.

SCIRPUS ATROVIRENS

Common Name	Bulrush.
Taxonomy	Part of the great sedge family, the Cyperaceae, aquatic plants characterized by triangular stems. Other genera within the family include the sedges, *Carex* spp., and *Cyperus,* tough little ditch plants with long graceful bracts subtending the inflorescence. Papyrus is a species of *Cyperus,* and many other species within the family worldwide are used in mat making and basketry.
Part Used	Rootstock, bulblets.
Chemistry	Unknown, although alkaloids are probably present.

Scirpus atrovirens is a good example of how much investigation still remains to done. Here is a plant, known to be psychoactive, from a very common family, that we know very little about. Its chemistry is uncertain, and few of the hundreds of other species within the genus have ever been studied for psychoactivity. The Tarahumara both revere and fear this plant, claiming that the powers of the plant would drive anyone foolish enough to cultivate it insane.

Scirpus is a widely distributed genus, and while plant chemistry can vary a great deal from species to species, and even among strains of one species, the fact that



SCIRPUS CALIFORNICUS, "CALIFORNIA BULRUSH" alkaloids have been discovered in both *Scirpus* and *Cyperus* indicate that local species of both genera are worth some investigation.

How does one investigate? Here we get into methodology. One way is to listen for folklore or ethnic uses of the plant from people who have shared its habitat. Is the plant on any list of medicinals? Does it play a part in any myths? Lists of poisonous plants are also good pointers. *Scirpus americanus* is suspected of producing pulmonary emphysema in cattle in Wyoming. But remember that nobody knows all the plants. There are plant allies waiting that no one has yet discovered.

Effects The Tarahumara report that the species of rush that they call *bakana* induces brilliantly colored visions, as well as the ability to travel great distances and to speak with the dead.

The Plant *Scirpus,* or bulrush, is cosmopolitan, but prefers the temperate and subarctic zones. Two species in India are used medicinally, *S. grossus* for diarrhea and *S. articulatus* as a purgative. Montane species of *Scirpus* are generally two or three feet high, but the California tule rush grows to more than fifteen feet in height. Indians used the tule rush to make boats.

Floating among the tules on tules . . .
Tule elk. Tule huts, the rushes tied over bent willow ribs.

The draining of the marshes in the Great Central Valley of California may have been the largest destruction of wildlife in the whole American westward expansion except for the slaughter of the bison.

Tule huts. Tule skirts. Tule fog.
Tule mind.

Related Species Thousands, worldwide. An Amazonian *Cyperus* called *piri-piri,* in addition to its many medicinal uses, is used as an admixture to ayahuasca. A fungus that reportedly infects every cultivar produces ergot alkaloids.

The *Cyperus* genus is generally shorter than *Scirpus.* They all have the triangular stem characteristic of the Cyperaceae.

METHODOLOGY I

Ethnobotany should be considered a proper subset of our Work. Ethnobotanists are generally both botanists and anthropologists, and it is essential for the owlchemist to have a basic knowledge of these two disciplines if she is to avoid certain terrible pitfalls of the path, such as clownish foppery or early death.

No mistake here about the seriousness of our endeavor and its concomitant dangers. I remember once seeing a group of edible *Agaricus* in a meadow near an old oak tree. And right in the middle of the cluster was an *Amanita phalloides,* the veil washed off by a recent rain, and the characteristic greenish yellow of the pileus faded to a cream color that just matched the edible meadow mushrooms surrounding it. I remember thinking how if that one mushroom were carelessly dropped into a collecting basket along with the other mushrooms, the stew would contain enough poison to take away not only the collector, but his family and any guest at his table as well.

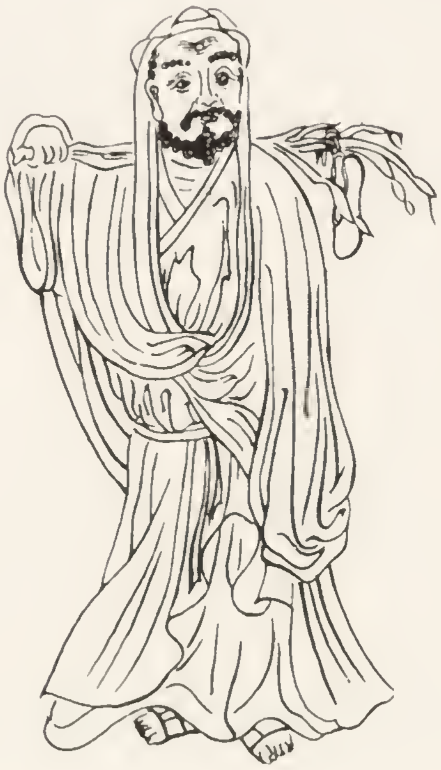
> . . . *the world's most dangerous sport.*

Ethnobotany, and ethnology generally, are important to our Quest for several reasons. For one, traditionally, poisoners have never lived in a vacuum – which is really a tautology. They worked within a cultural context that, if not actively supporting and encouraging their efforts, at least provided the "special consensus," to borrow Carlos Castaneda's term, necessary for spiritual, social, and psychological integration. Which can be the difference between being an eccentric and being a freak.

Learning about traditional cultures can dispel or correct storybook and Hollywood preconceptions and images relating to posture and stance of poison doctors within their societies. Native and traditional peoples have been studying plants for countless generations: they are the experts. It is best to learn one's plantcraft from the experts. However, unless you are going to *go native,* and live and learn your medicine within an adopted culture, the best place to study ethnology is in a library. An opportunity to do fieldwork should not be passed up, but even fieldwork is not a replacement for library work. Years of work by ethnobotanists is already collected in scientific journals and books.

And getting back to matters of risk – the plants of interest to us, by definition, contain poisons. Certain people and peoples have already conducted extensive tests on these plants – much more protracted studies than could be carried out by the Food and Drug Administration (FDA) in a mere generation. If you can meet, or even read about, people who have been using a particular plant for centuries, that puts some upper bound on the toxicity of the plant in question. (It does not mean that the plant is completely safe; witness tobacco. But then, only a fool would consider any poison to be safe!)

> *The most valuable standpoints are always the last to be found, but the most valuable standpoints are the methods.*
>
> *– Friedrich Wilhelm Nietzsche*



BODHIDHARMA WITH TEA PLANT

GROUND STATE CALIBRATION

Ground state training begins with *nigredo,* and the calibration continues through the *albedo* stage, the sudden flowering of the peacock's tail. *Nigredo* is about coming down. And to come down, all the way down, takes some time. You cannot do it overnight, and you cannot do it by getting high. Nor, as the wise maintain, can you do it by reading or thinking. Body and mind must come to rest.

> *If you do not know the ground state intimately, how will you be able to separate the signal from the noise, during the phase of amplification?*

We speak of a sulphurous ground state and a mercurial ground state. For the sulphurous ground state, attention to diet, even fasting, can be efficacious. And we must interpret *diet* in the largest possible meaning of the word.

> *We seek the salt, beneath the patina.*

By mercurial ground state we do not mean that you have stopped breathing – that would mean you are dead– another matter, as it were. Our mercurial ground state is the "Unground," the source of will and freedom.

> *The Unground is an eternal Nothing but it gives an eternal beginning, that is, a passion; for the Nothing is a passion for Something.*
>
> *– Jacob Böhme, Six Theosophic Points*

Just letting the mercury circulate is the whole method. The circulating mercury dissolves the sulphurous corruption. When you attain the Unground you have the salt.

To Sal, all is clear. There is no confusion. You know the true ground state. You know what the stone is, and where it is. You know your own original nature. You know how to proceed. So what I want to know is, since you have this Sal, why are you still interested in poisons?

> *A fair calibration.*

METHODOLOGY II

In a dark age such as our own, it is difficult to find the true poison path: difficult to find the living tradition, difficult to find a living teacher. Several religious groups practice in traditional ways: the Native American Church, the *Santo Daime* in Brazil, and the *União do Vegetal,* also in Brazil, are three examples that come to mind. Visit them if you have an opportunity. But otherwise, opportunities are scarce. And "going native," except for certain true misfits, is more often a diversion than a way to harmonic power. Thus we seek for roots and models in the Royal Art – itself at the fringe of things, even in its heyday. The very origins of the alchemical tradition lie in syncretism: Greek religion, Egyptian technology, Jewish *Kabbalah.* Heterodoxy is its nature, and thus it suits our purposes well.

Alchemy involved reading and study, but also experimentation. At some point every alchemist has to try something that hasn't been tested before – something that you can't read about in a book.

The process of extracting the mercury from the sulphur with the alchemical furnace we will call *pyrolation,* and the process of dissolving the mercury in the alchemical flask we will, following tradition, call *ingestion.* Clear enough?

Further, since, as stated most succinctly by the wise Kintpuash, also called Captain Jack, the Modoc chief,

> *Life is sweet,*

when experimenting with an unknown sulphur, go slowly indeed. Search for clues as to the nature of the mercury by scouring for reports in the literature, or reports on its relatives (other members of its family), or folklore.

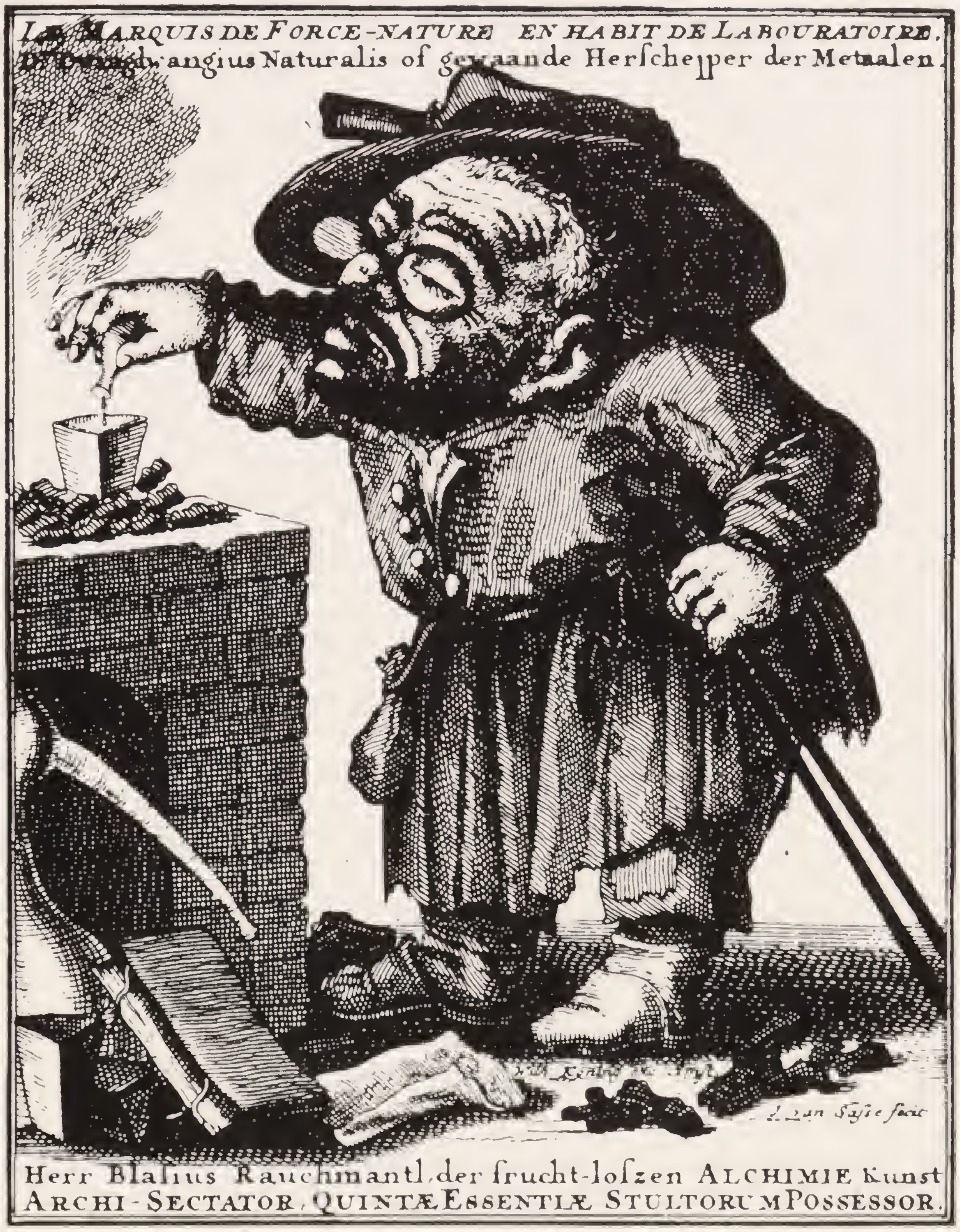
Do not go into our art blindly. If you, O alchemist, wish to live a whole life – neither ended abruptly by lethal toxins, nor shortened by slow toxins, nor mutated by carcinogens – most certainly, before you experiment,

> KNOW THE POISONS!

The more you know about poisons the better chance you have of avoiding them.

> *And it wouldn't take very long to spot an alkaloid test with some Dragendorff reagent, either. We'll talk more about that later.*

So, the alchemist knows the poisons, and knows that his sulphur is within a tolerable dosage. At that point, assuming the material is suitable, I often prefer to begin testing the mercury by pyrolation – again, beginning with a small quantity. If you have good ground state calibration, it is frequently possible to extrapolate


LE MARQUIS DE FORCE-NATURE EN HABIT DE LABOURATOIRE.
angius Naturalis of gewaande Herſchepper der Metaalen.
J. van Sasse fecit
Herr Blaſius Rauchmantl, der frucht-loſzen ALCHIMIE Kunst
ARCHI-SECTATOR, QUINTÆ ESSENTIÆ STULTORUM POSSESSOR.

THE "MARQUIS DE FORCE-NATURE" IN HIS LABORATORY DRESS, 1716

the general properties of the substance without recourse to ingestion, which is usually more dangerous.

There. That's about as irresponsible as I can be, in good conscience.

> *With the objective of getting to the bottom of this, I decided on a self-experiment. In order to be cautious I therefore began the planned series of experiments with the smallest quantity with which a definite effect could just barely be expected, considering the activity of the ergot alkaloids known at the time, namely with 0.25 mg lysergic acid diethylamide tartrate. . . .*
>
> *– Albert Hofmann, "How LSD Originated"*

THANATOPATHIA

Here are the gates. Crossroads.

> *Without hesitation the beautiful goddess replied:*
> *"Zeus-sprung son of Laertes, resourceful Odysseus,*
> *In my house stay no longer against your will,*
> *But before I can send you home, there's one more journey*
> *You must make, to the halls of Hades and dread*
> *Persephone, to hear the truth from Tiresias the blind*
> *Theban seer, whose mind even death has spared."*
>
> *– Homer, Odyssey*

You need a bridge. And barter.

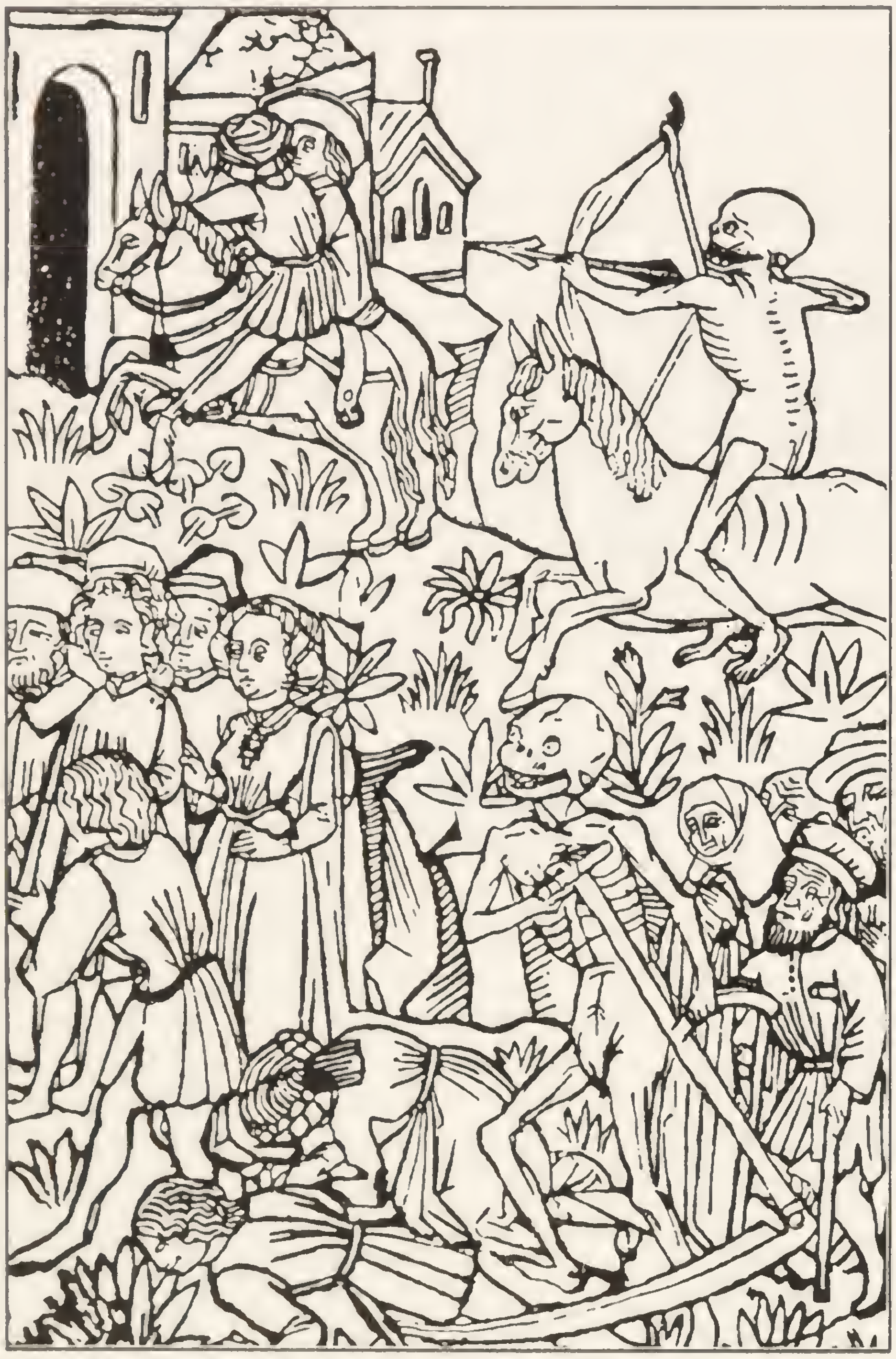
To commune with the Spiritual, the crux of matter. For intercourse with the Other, the heart of issue. At the intersection of the Axes, Origin.

> *Here is Exú,*
> *midnight Exú*
> *Exú of intersections!*
> *Here are Exú and his wife,*
> *the lovely Pomba-Gira!*
> *He's wearing his black cape*
> *he's wearing his black hat*
> *he's wearing his polished shoes.*
> *With his iron trident in his hand,*
> *Here is Exú,*
> *midnight Exú*
> *Exú of intersections!*
>
> *– Macumba song (in Bramly 1975)*

Exú likes cigars.

Nigredo Alchemically, the obvious place to begin. To prepare the material, a lot has to die and slough off. This stage is sometimes called *putrefactio*. In shamanism, this is the stage of initiation: sickness, death, dismemberment. Perhaps a visit to the Lowerworld. *Thanatopathics* are allies that can re-create the initiatory sickness. In varying degrees, *thanatopathics* let you taste death.

The Great Work is healing. If you can figure out how to heal yourself, then you know something for sure. You have expertise. So you have to be sick. And maybe you want to be really good at this healing, so you want to practice. And how can you practice without poison?



WEAPONS OF DEATH, 1463

Intoxicate means "to poison," "to drug." Greek *toxicon* literally meant "arrow-poison," related to the Sumerian word *tukul,* "a weapon." All *thanatopathics* are weapons – used to kill animals, if not people.

> *A brush with death is stimulating indeed;*
> *A closer taste rather calms.*

Some practitioners rely on the poisons they already have.

> *Beyond that: shadows, rivers, ferrymen.*
> *Eternal peace, or great terror.*
> *Thanatopathia.*

NICOTIANA TABACUM AND RELATED SPECIES

Common Names Tobacco, *petún, piciétl.*

Taxonomy The two cultivated species are *Nicotiana tabacum* and *N. rusticum.* Both of these species are tetraploids, the result of a fertile hybrid between two wild species sometime in antiquity, evidently in the Andean region of South America. Almost all American and European commercial tobaccos are *Nicotiana tabacum.*

There are some five dozen wild species of *Nicotiana,* three-quarters of them native to the Americas. These species include *N. glauca, N. sylvestris, N. trigonophylla, N. attenuata, N. bigelovii,* and *N. petunioides.* Nicotine content is highest in the cultivated species, and is much higher in *Nicotiana rustica* than in *Nicotiana tabacum.*

Part Used Leaves.

Chemistry Alkaloids: primarily nicotine; secondary alkaloids such as nornicotine and anabasine are also present, especially in some of the other *Nicotiana* species. Harman, a harminelike alkaloid, has been found in the smoke of some tobaccos. Expect a lot of variation in the effects among the different species and among different strains of the domestic species.

How Taken Tobacco is ingested by drinking, smoking, snorting, chewing, sucking, licking, by applying it topically as an ointment, and by inserting it rectally as an enema. Drinking a strong decoction is probably the oldest method. Frequently the solution is drunk through the nostrils, said to induce blacknesss and red flashes in the drinker's vision. Tobacco snuffs are also ancient, the tobacco sometimes being mixed with other hallucinogenic plants. There is ancient archaeological evidence for tobacco enemas. Smoking may be a more recent development, though some tubular pipes uncovered in a dig have been dated at three thousand years. Tobacco may be the oldest cultigen in America, going back more than eight thousand years and antedating food plants. Among many Indian tribes, such as the Sinkyone in California, tobacco was the only cultivated crop.

The Plant All the treachery of our beloved poisons is evident in this plant. It is a stimulant, a tranquilizer, a narcotic, and, if we are to believe the ethnobotanical reports, a hallucinogen. It is also the most toxic plant regularly used by human beings. Tobacco is a model of ambiguity: healer and killer, ally and seducer. As poison, it is the type.

Spin off, keep them back.
Calm my fears, I will speak.

Tobacco is the primary shamanic plant of the New World. Within this plant are prototypes of all the lessons of the Poison Path. You could learn them all from this one plant . . . if it didn't kill you first.

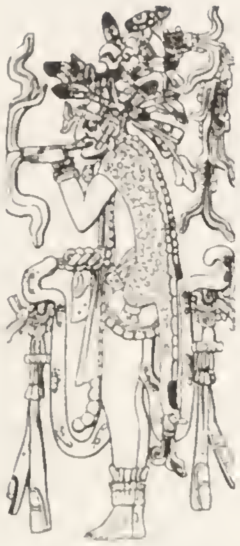
And it will get you, if you play with it.
Maybe you chip, nip, lick around the edges,
but it will get you, if you keep it up.

If you can't kick a tobacco habit you are no *doctor,* and had best not proceed. Face it, you lack the solar salt. And consider, there are even greater dangers ahead. Further, I certainly don't want to get blamed for your demise, which quite possibly would be most miserable. You will cough. You will gasp for breath. You will suffocate at sea level, immersed in an ocean of air.

Graffito: "SMOKING IS A DYING ART."

Like a drowning man, you will panic and lash out at those around you, curse your own friends and family, and hurt those who love you most. What makes you think you can succeed where so many others have failed? Besides, you are fine just where you are. There is nothing to accomplish by continuing.

Turn back now. Freud was never able to quit. The longest he ever stayed off was fourteen months, "all of it torture."


MAYAN RAIN GOD, SMOKING

And don't think that approaching tobacco as a sacrament gives you any exemption. Andrew Weil suggested that the reason the South American Indians experienced hallucinogenic effects from tobacco, while we do not, is that the Indians only used tobacco on special occasions, as a sacred plant; but I must differ with him. While it is true that in traditional shamanic cultures tobacco is used ritually rather than recreationally, that does not mean that it is used infrequently. The South American shamans have almost all addicted themselves to tobacco, methodically, so that they can tolerate larger and larger doses.

When Rocio began her apprenticeship, her teacher gave her infusions of tobacco to drink every day for a month. She was vomiting up blood. At the end of a month he took her into the jungle and gave her a draught of guanto – left her there and told her that the guanto would show her the way back.

Tobacco is the great purifier. That is part of its weapon-nature. If you are going to mess with poisons, tobacco is a good plant to be friends with. As an ally, it is fire for fire and earth for earth.

Sometimes a plant ally gets uppity, especially some of them. Sometimes Salvia divinorum grows up through the ground where your feet are resting, then rushes up through your legs and body. Sometimes the stems get too numerous: twisting, crossing, leaves sprouting before your face, covering eyes – at such a time, if you need a respite, a little tobacco will push the ally back to about arm's length. For a while, anyway.

In our culture, with our mild tobaccos and our cigarettes, we have forgotten the hammerlike power of *Nicotiana*. We read the early accounts and wonder if it is the same plant we are so frequently bothered by in restaurants. And in most cases, indeed, it is not the same plant.

> *The Indians say that this smoke is very wholesome for clearing and consuming superfluous humors of the brain. Moreover, if taken in this manner it satisfies hunger and thirst for some time. They also commonly use it if they have to discuss some matters among themselves: they draw in the smoke and then speak . . .*
>
> *– André Thevet (in Schleiffer 1973)*

Thevet was a Franciscan friar. It was Thevet, not Nicot, who introduced *Nicotiana tabacum* into Europe in the mid-1500s. Nicot's seeds were evidently *Nicotiana rustica*. Tobacco of the *rustica* species had been known in Spain for several generations before Thevet introduced *N. tabacum* into France, but it had been used almost exclusively as a medicine, not as a recreational drug.

TOBACCO FLOWER, FROM AZTEC STATUE OF THE GOD XOCHIPILLI

The balance of alkaloids varies among the different species and strains. In some varieties of *Nicotiana rustica* the nicotine content of the leaves approaches 20 percent. Since one or two drops of pure nicotine are a lethal dose, it's clear that, as the gangsters say, we're playing hardball.

> *The Tibetans call tobacco the poisonous dakini killer. They say that tobacco smoke, like the smoke from burning flesh, attracts the wrong spirits, that tobacco grows where menstrual blood drops.*

The smoke from *Nicotiana rustica* is exceedingly strong. Some tobacco shamans have developed a technique of hyperventilating at the same time they are inhaling the smoke from a huge cigar, sucking in air along with the smoke. By doing this they are able get large quantities of the choking smoke into their lungs. They will continue smoking thus until falling unconscious – which after all is the whole point. This method is perhaps slightly safer than drinking tobacco infusions. Drinking, if the initiate does not vomit up the tobacco after losing consciousness, may result in death or permanent injury. The most hazardous technique of ingesting tobacco is the tobacco enema, wherein the danger of overdose is extreme.

Nicotiana tabacum usually contains nornicotine as a secondary alkaloid. Its effects are said to be similar to those of nicotine. *Nicotiana glauca,* the tree tobacco that has naturalized itself in southern California, contains the alkaloid anabasine, an isomer of nicotine. One plant person I know likes tree tobacco and smokes it, but I've always found it rather harsh. Eaten, of course, it can kill just as quickly as does nicotine, and has. Of the wild tobaccos of western North America, *Nicotiana attenuata,* coyote tobacco, is said to be particularly fine. But *Nicotiana acuminata* should also be tried, and in fact there may be some confusion between these two species.

Black tobacco is sometimes made from *Nicotiana rustica,* as are some Turkish tobaccos, but the major industrial use of *Nicotiana rustica* today is in the manufacture of insecticide.

> *I lived for some years in the Sierras in an uninsulated and somewhat drafty cabin. The cabin lay right across what must have been the wasp equivalent of an "elephant walk," because wasps of many varieties were constantly crawling in and out, making their way through, or collecting on the windows. Some of them stayed, and there was a paper-wasp nest right over the loft. At night, when we were in bed, the wasps were in bed also. As they were, at such times, all quiet on the nest, there was never any conflict of interest or great priority to remove the nest. But I do recall the way they would react to any wisp of tobacco smoke if we smoked in bed: instantly the whole nest abuzz – all the wasps stretched up on their thin legs, fanning angry wings . . .*

In the forests of the northwest Amazon *Nicotiana rustica* is made into heavy black cylinders, called *masu* or *mapuchu.* The rolls have the size and heft of a San Francisco sausage. You carve some of the tobacco off with a knife, stuff it in a pipe or roll it in a cornhusk, light it and *watch out!*

Pharmacology

Nicotine is structurally similar to acetylcholine, a neurotransmitter active in both the sympathetic and the parasympathetic nervous systems, as well as in the somatic nervous system at neuromuscular junctures. Recent discoveries have also found acetylcholine in the central nervous system (CNS), which gives some neurochemical support for findings that nicotine affects learning.

> *Recognition of the nicotine molecule by cholinergic receptors is possible because the positive charge on its ammonium head and the electronegative charge of its pyridine ring are exactly the same distance apart from each other as are corresponding electrical charges on the acetylcholine molecule.*
>
> *– Johannes Wilbert (1987)*

In the CNS nicotine increases arousal and enhances the learning and performance of simple tasks. Performance of complex tasks has been shown to be impaired in studies by George Spilich (Brower 1993), but the mechanism is not understood and other investigators are skeptical of his results. All agree that dosage is critical to whether performance is enhanced or impaired.

The stimulant/sedative effects of nicotine may be due to the fact that nicotine binds more tightly to the nerve endings than does acetylcholine. Thus, while initially enabling a rush of nervous transmission, the nicotine stays on to monopolize the site, inhibiting further action.

Nicotine's parasympathetic stimulation of the smooth muscles of the digestive tract are well known. Its actions on the sympathetic nervous system are less well understood, but in addition to its direct action by mimicking acetycholine, nicotine stimulates the release of epinephrine (adrenaline) and dopamine, and in lesser amounts norepinephrine, and serotonin. Norepinephrine is a neurohormone chemically related to mescaline. The significance of these neurotransmitters to the alleged hallucinatory effects of tobacco is still inconclusive.

Toxic effects include perspiration, light-headedness, general weakness, tremors, convulsions, and respiratory paralysis.

Tobacco can induce amblyopia, a condition characterized by day blindness but enhanced night vision. Jaguar shamans like tobacco. Heavy tobacco use creates a strong body odor, a raspy voice, and a rough, furred tongue.

CORRESPONDENCES

ACTIVITY	Politics/Diplomacy
ANIMAL	Jaguar, Bison
ARCHETYPE	The Woman-Who-Waits
ART FORM	Theater
BODILY FUNCTION	Respiration
BODY PART	Back of Skull
BUDDHA REALM	Vajra
CHORD	Subdominant
COLOR	Yellow
CRUTCH FOR	Nervousness
DIMENSION	Point
DISCIPLINE	Rhetoric
ELEMENT	Earth
FORM OF ENERGY	Steam
FORM OF IGNORANCE	Artifice
GEMSTONE	Quartz/Zircon
GEOMETRY	Euclidean
GRAMMAR	Deterministic Finite State
HISTORICAL AGE	Paleolithic
IMAGE	The Calumet
LANDSCAPE	Clearings
LOGICAL OPERATOR	Nand

History

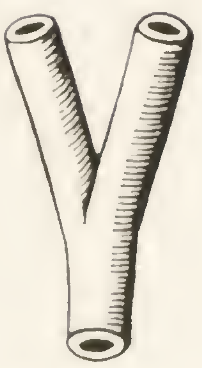
At the time of European contact, tobacco was more widely cultivated in the New World than maize. After its discovery by Europeans in the Caribbean, tobacco spread around the world more quickly than any plant in history, before or since. One of the reasons for its rapid spread, undoubtedly, is that nicotine is one of the most addictive substances known. Another reason is that tobacco was a favorite with sailors, and the mariners took it around with them.

> *Tobacco, I do assert, without fear of contradiction from the Avon Skylark, is the most soothing, sovereign and precious weed that ever our dear old mother Earth tendered to the use of man!*
>
> – *Ben Jonson, to Walter Raleigh in the Mermaid Tavern*

Early sailors told of the almost unbelieveable aphrodisiacal qualities of tobacco – how women, after taking tobacco, were more passionate and active . . . Whereas, in our culture, smoking tobacco is more commonly associated with the postcoital state.

> *Howard is a commercial fisherman in Alaska. It's hard to smoke out on the boat, out there, not so much because of the dampness as because you need your hands for work. So he takes "snoose," Copenhagen. A pinch just inside the lip. But you don't swallow the juice, you spit it. At sea on a small boat that is easy, but stateside, in drawing rooms or living rooms, it can present a problem.*
>
> *What he does is to carry around a beer bottle, or a can, and to use it as a spittoon. After a couple of hours such a bottle could collect a surprising quantity of liquid. Sometimes in the course of an evening, especially if there was any partying going on, he would have several bottles in use, leaving them around in different rooms, as he wandered from group to group. Now spitting into the mouth of a beer bottle is a neat trick, but that's not the point of the story. The point is that after enough beers, the dread event would occur. He, or some other guest, promiscuously snatching a beer off the table, would get a slug of snoose juice instead of beer . . .*

Nicotine is almost as readily absorbed through the skin as through the mucous membranes. I have availed myself of this fact by inserting a nice pinch of snoose between my two little toes. The effect is gentle and sustained. Used to be, if I found myself nodding out at a lecture or a meeting, I would pull out a tiny tin of snuff and snort a dash or two up my nostrils to wake up. Trouble is, at some kinds of meetings, people might think you were snorting coke. (And actually, about a pinhead of cocaine would do the job pretty well.) Anyway, an alternative to snuff at the corporate meeting, if you don't mind getting the reputation of being an eccentric, is to take off your shoe and sock and put a pinch of Copenhagen between your toes. Don't be overly obtrusive, just put your sock and shoe back on. Besides, why worry, if you are reading this you probably *already* have a reputation as an eccentric.

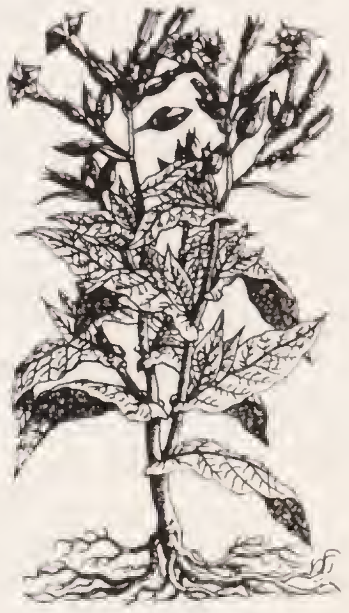


NOSE PIPE, OVIEDO Y VALDES, 1547

(Myself, however, these days, in such circumstances, I usually just stand up and pace around the room. Pacing is really better than stimulants. Not only does it awaken the circulation, but it also effects presence and breaks conceptual blocks, helping to free one from the confines of others' ideas.)

Snuff is about one hundred times safer than cigarettes. It is estimated that if the 40 million Americans who smoke switched to snuff, the 400,000 annual deaths would be reduced to 6,000. Snuff can cause oral cancer, but the survival rate for oral cancer is 75 percent, whereas the survival rate for lung cancer is only 13 percent.

> *Sublime tobacco! which, from east to west,*
> *Cheers the Tar's labor or the Turkman's rest.*
>
> *– Lord Byron, "Sublime Tobacco"*



TOBACCO, FROM L'ECLUSE'S HISTORIA MEDICINAL, 1579

There were many reactions against the tobacco plant as it conquered Europe. In the seventeenth century possession of tobacco was a capital offense in Russia, was prohibited in many parts of Germany, and was punishable by torture, beheading, hanging, quartering, or crushing in the Ottoman Empire. In England in 1604 King James I published *A Counterblaste to Tobacco,* unsuccessfully attempting to curb tobacco use and, by the by, proving that he was no wimp with the pen:

> *In your abuse thereof sinning against God, harming yourselves both in persons and goods, and taking also thereby the markes and notes of vanities upon you: by the custome thereof making your selves to be wondered at by all forraine civil Nations, and by all strangers that come among you, to be scorned and contemned. A custome lothsome to the eye, hateful to the Nose, harmefull to the braine, dangerous to the Lungs, and the blacke stinking fume thereof, neerest resembling the horrible Stigian smoke of the pit that is bottomlesse.*

No wimp with the pen, and no wimp with the block either, King James had Walter Raleigh beheaded. Raleigh had probably popularized tobacco smoking more than any other man in England. On his way to the block he stopped and picked up the axe, felt the edge, and remarked: "This is sharp medicine, but it will cure all disease." He refused to give up his pipe. It was in his mouth when the axe fell.

The English settlers at Jamestown had learned about tobacco from Powhatan and Opechancanough. In 1612, the year before he married Matowaka (Pocahontas), John Rolfe managed to obtain some seeds of *Nicotiana tabacum.* It is believed that Rolfe obtained his seeds from the Spanish or Portuguese, since all of the tobacco grown by the Indians in eastern North America was *Nicotiana rustica.* Tobacco became an instant cash crop of astounding success. It is safe to say that the colony would never have survived without it – that the tobacco plant is the father plant of the *United States of America.* (The mother plant, of course, from the northern colonies, would be maize.)

In the nineteenth century, the invention of the cigarette-rolling machine and a new method of curing started the cigarette toward its present dominance of the tobacco market. The new curing produced a milder tobacco that could be inhaled into the lungs even by recreational users, and this method of ingestion proved to be the most quickly addicting of any.

Tobacco Shamanism

Tobacco has to do with energy. Transferring energy, attuning energy. As such, energy being a traditionally godly province, tobacco is the food of the gods. Even gods have to eat, after all. And remember that tobacco is very foodlike. Taking tobacco relieves hunger, much like food does. Further, tobacco grows in gardens, just like food. It likes gardens. It likes rich, sunny soil, and will even volunteer if you prepare a spot for it. We have already stated that tobacco is probably the oldest cultigen in North America. It is quite possible that the cultivation and domestication of plants began with volunteers like tobacco that made themselves at home in the sunny, disturbed ground around dwellings . . . ten to twenty thousand years ago at the dawn of the Holocene.

So we have a plant that looks like food, grows where food grows, allays hunger, but still is not quite food. That is, tobacco allays hunger but only temporarily: eventually you still have to eat real food. And tobacco brings its own hunger, a craving that is analagous to the hunger for food. Given these premises, deducing that tobacco is indeed food, but spirit food rather than human food, is not so far-fetched. Johannes Wilbert, in his excellent book *Tobacco and Shamanism in South America,* notes that the abandoned house sites where adventitious *Nicotiana* plants were common were frequently also used as cemeteries, reinforcing the connection between tobacco and the Other World.

> *A Campa tobacco shaman considers himself the husband of Jaguar Woman*
> *and calls his tube of ambil (tobacco paste) "my wife." Human foodstuffs*
> *don't satisfy jaguars. To avoid eating any of his own friends or relatives,*
> *a shaman hunting in his jaguar form travels great distances.*

The gods' problem is that although they need to eat, just as we do, no food grows in the spirit land. So they have to deal with humans, who have the tobacco monopoly. They have to bargain. In exchange for our feeding them, and enduring the hardships that such feeding entails, they will try to help us out on their side: keeping accidents from happening, diverting disasters, spilling the beans about where certain animals are living or who it was that pilfered the fish traps, and generally acting as diplomats between various, often malevolent, spirits.

> *A deal?*

So the spirits let us know when they are hungry: the craving of nicotine withdrawal is the growling stomach of the hungry spirit. We feed them by taking tobacco ourselves, and a transference takes place. Some shamans smoke tobacco more or less continuously.

> *Sometimes animals in the spirit world drink too much at one of the tobacco pools and get transported into this world.*

Tobacco provides what every shaman must undergo: sickness, death, and rebirth. The symptoms of nicotine poisoning coincide almost perfectly with the stages of shamanic initiation. Nausea and vomiting are followed by tremors, convulsions, and catatonia. This is the shamanic death, the doorway to the realm where the spirits and the gods live. When the shaman recovers consciousness, he has had dreams and visions of the spirit world, has had conversations with the gods, and has learned the secret of traveling between worlds.

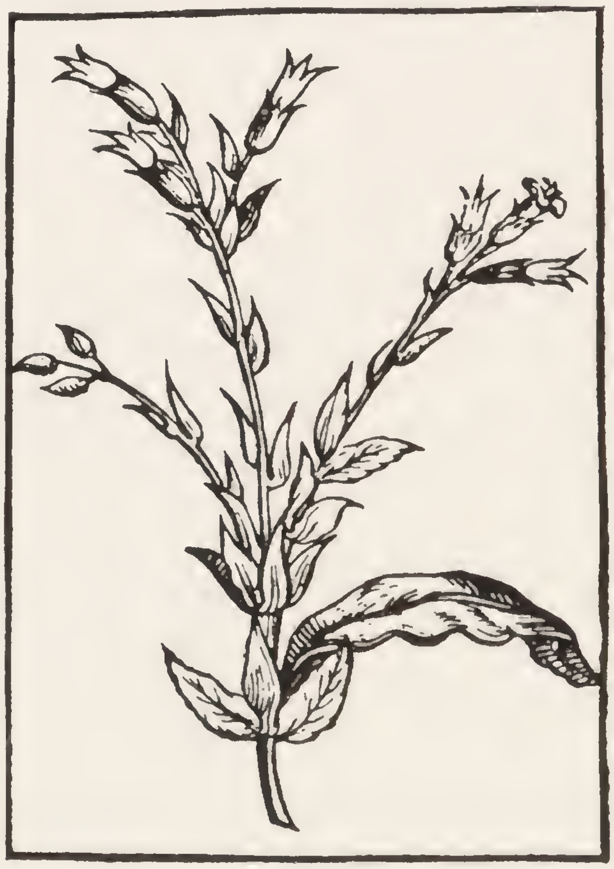
> *Tobacco is the muscle. Maybe the mushrooms or the little leaves of the Shepherdess will give you the seeing, but you need tobacco for the muscle, to clean the sickness out.*

And the best part is, for a shaman, that tobacco doesn't waste a lot of time. A busy person needs that, needs an ally who doesn't take all day just to answer a question.

> *You want poison? You got it.*

Divination

Almost all of the early accounts of Indian tobacco use published by Europeans mention its use in divination: in capnomancy, spodomancy, and, through the trance state, oneiromancy. One method of spodomancy involves scrutinizing the shape of the ash on the end of a huge cigar: seeing whether the ash is straight or curved. Capnomancy involves watching the column of smoke from a clump of burning tobacco and seeing in which direction it veers. But by far the most common method of divination is by oneiromancy, by the dreams and visions experienced while under tobacco-induced trances and comas. Those returning from tobacco trances speak with the voices of the gods themselves.



JOYFULLE NEWES OUT OF THE NEWE FOUNDE WORLDE, NICOLAS MONARDES, 1577

CORRESPONDENCES

METAL	Iron
METAPHOR	Energy
MINERAL	Slate
MYTH	Theft of Fire
MYTHIC HERO	Raven
NUMBER	Rational/Fractions
OCCUPATION	Warrior
PERIODIC TABLE COLUMN	Alkalai Earths
PHASE OF COITUS	Penetration
PHASE OF MATTER	Crystalline
PHYSICAL CONSTANT	Elementary Charge, *e*
PLANET	Mars
PLATONIC SOLID	Tetrahedron
POISON	Uncertainty
QUARK	Down

Poesis Tobacco is easy to grow, although the germination stage is delicate. The seeds are so tiny that missing a watering can be fatal. Also, many insects seem to be fond of the seedlings, and one slug can consume scores of them in a single night. Once established, the plant is hardy and will probably volunteer every year thereafter.

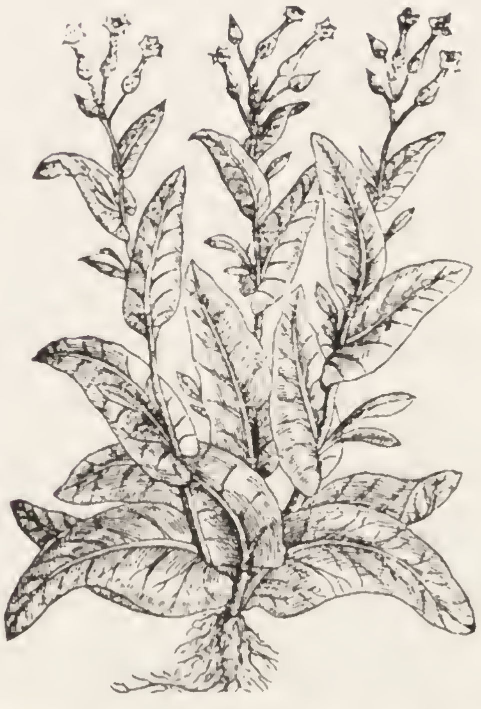
Preparing good tobacco is another matter. Just drying the leaves results in a surprisingly mild-tasting smoke (not necessarily mild in potency!). Tobacco has to be fermented to have flavor: it has to "stew in its own juices." Jungle tobacco, like *mapuchu,* is made by pouring a hot extraction of some of the leaves over others that have been dried. The whole mass is rolled up into a long cylinder and wrapped tightly with vines. Industrialized countries generally use hydraulic presses.

Breeding high-nicotine tobaccos is difficult. In the 1970s a breeder at the U.S. Department of Agriculture (USDA) was unsuccessful in his attempts. Later, an American tobacco company, Brown & Williamson, obtained some of the USDA seeds and with such advanced breeding techniques as anther culture, tissue culture, and protoplast fusion, were able to breed a strain they called "Y-1" with

6 percent nicotine content, twice the nicotine content of most tobaccos. Even though stronger tobaccos enable a smoker to get the same dose of nicotine with fewer tars, which are by far the most damaging substances in cigarettes, the FDA reacted to the disclosure as proof that the tobacco companies are manipulating the nicotine content of cigarettes to increase their addictiveness. As if that were necessary.

CORRESPONDENCES

QUANTUM FORCE	Graviton
REALM OF PLEASURE	Muscles
RITUAL EVENT	Death
ROCK	Basalt
SEASON	Summer
SENSE	Vision
SEXUAL POSITION	Man Behind
SIN	Avarice
SOCIAL EVENT	General Strike
TAROT KEY	Emperor
TIME OF DAY	Afternoon
TOOL	Hammer
VIRTUE	Prudence
VOWEL	Low Central: *a*



NICOTIANA, FROM L'OVEL'S STIRPIUM ADVERSARIA NOVA, 1576

PHENOMENOLOGICAL TAXONOMY OF PSYCHOTROPES

Every plant is an individual.

> *Wrong again. We are not individuals at all, we are all connected. We are individuals the way each blossom on an apple tree is an individual.*

Any attempt to force a wild system into the confines of a formal system is inescapably arbitrary. Wild systems and formal systems inhabit separate dimensions. And while there is a hazy, fuzzy-edged intersection of the two planes, the linkage remains metaphorical. Logically (it is so hard to escape logic), the two sets are disjoint. Eddington thought so. Physics is the intersection of a formal set, mathematics, with a wild set, natural phenomena.

Eddington characterized the difference between the scientific domain and the extrascientific not as concrete versus transcendental, but as metrical versus nonmetrical. Those phenomena intrinsically nonmetrical can never be part of science.

> *To put the conclusion crudely – the stuff of the world is mind-stuff . . . something more general than our individual conscious minds; but we may think of its nature as not altogether foreign to the feelings in our consciousness. The realistic matter and fields of force of former physical theory are altogether irrelevant – except in so far as the mind-stuff has itself spun these imaginings.*
>
> – *Arthur Eddington*

Formal systems are well defined; they are describable. In fact, the rules are the system. Chance can be simulated, but it is not clear that chance exists in formal systems: physicists, mathematicians, and Schrödinger's cat are debating the issue. (It's not clear that chance exists in wild systems either, but that's another topic.)

It's like, language is a wild system, whereas generative grammar is a formal system. Generative grammar can describe, more or less, the grammar of wild language, but only more or less. It is this "more or less" that interests us.

Wild systems contain poisons. Formal systems are certainly poisonous, but lack the playfulness of, say, wild coyotes.

> *Coyote is the one who breaks the rules.*

We call this crucial difference the *Coyote Principle*. Stated most succinctly, it goes, "No matter how well you plan it out, Coyote will find some way to fuck it up." Like all poisons, the Coyote Principle is both a bane and a blessing. Sometimes this principle is referred to as the *human factor*.

Botanical taxonomy is not an algebra: it is a lexicon, not a language. Still, all taxonomies have formal structure. Taxonomy wishes to separate the cats from the dogs – not so difficult, you think, until you come to hyenas. We can all recognize roses and grasses and can see that roses may be subdivided into red roses and yellow roses. And we could divide grasses into tall grasses and short grasses, or maybe into grasses with awns (like foxtails) and awnless grasses. And in some way roses are like camellias, while likewise grasses are like sedges. And more, grasses, sedges, and cattails could form a group the way roses, camellias, and peonies form a group. It goes like that. So we try to be rational.

In scientific taxonomy we wish to find those relationships, whether chemical, morphological, or cytological, that express evolutionary developments. It has not always been thus, as is clear from the common names for plants in English and other languages. Older taxonomies were sometimes based on morphological similarity, but often also on other properties, including pharmacological properties. Thus we have "yarrow" and "golden yarrow," related by outward structure, and "sage" and "sagebrush," related by smell. "Dwale-berry" is a pharmacological name, as is *teonanacatl,* "God's flesh."

The point of this long-winded apology is to stress the metaphorical – that is, *magical* – and arbitrary nature of any taxonomic scheme. Our endeavor is to consider the effects of a variety of plants upon consciousness, and to classify the plants thereby. The water here gets murky. For one, the dosage is vital to the results. *Nicotiana* is a stimulant in small doses, but a sedative or deliriant in larger doses.

One might classify the plants on the basis of chemistry, but often a plant will contain a complex mixture of substances, not all of them related chemically, but all contributing to the perceived effect. Further, such classifications would quickly become numerous, and would often fail to reflect experiential similarities between chemically disparate plants.

Pharmacological categories, of course, are ancient, and are still used both in medicine and in traditional herbalism. Some of the pharmacological categories are analgesics, anodynes, sedatives, soporifics, emetics, expectorants, cathartics, cerebral stimulants, analeptics, convulsants, deliriants, etc., etc.

Recently, the Mexican ethnobotanist José Luis Díaz (1979) proposed a system structurally akin to that of Linnaeus, based on an earlier system suggested by J. Dealy and P. Deniker. In this system there are three main classes: *psychoanaleptics,* drugs that produce excitation; *psycholeptics,* drugs that induce depression; and *psychodysleptics,* drugs that produce an alteration. Díaz further divides these classes into "families," the families further subdivided into groups, and the groups into botanical species. Beneath "species," he lists chemical compounds.

DIAZ'S SYSTEM

CLASS	FAMILY
PSYCHOANALEPTICS	Psychostimulants
	Euphoriants
	Antidepressants
	Anxiety Inducers
	Convulsants
PSYCHOLEPTICS	Hypnotic-Sedatives
	Inebriants
	Minor Tranquilizers
	Antispasmodics
	Antimanics
PSYCHODYSLEPTICS	Hallucinogens
	Trance Inducers
	Cognodysleptics
	Deliriants
	Neurotoxins
	Narcotics

As an example, *Salvia divinorum* would be in Class: Psychodysleptics; Family: Cognodysleptics; Group: Terpene Labiatae.

Tree structures are best used to describe evolutionary relationships, relationships based on lineal history. While we will refer to Díaz's system occasionally, our purpose is not genealogical, but shares more with the purpose of a path: that is, to get somewhere. We have begun with the system introduced by Louis Lewin in 1924, the first such system I am aware of relating specifically to mind plants. Louis Lewin's seminal book *Phantastica* divided mind-altering plants into five categories: *euphorica, hypnotica, excitantia, inebriantia,* and *phantastica.* The fivefold scheme is coarse, but has the value of tradition. William Emboden, in *Narcotic Plants,* followed Lewin, but grouped *euphorica* and *hypnotica* together. Lewin had put opium in *euphorica*, and drugs that engendered sleep into *hypnotica*. Emboden broadened the class of *hypnotica* to include sedatives and tranquilizers both, as well as true soporifics, and included the opiates therein.

I have maintained Lewin's fivefold system, but offer a new class, *thanatopathia,* for tobacco. Five is a good number in the plant world, and one that is conspicuously absent from the mineral work.

There are things male, and things female –
some reveries are like eating fruits,
those others like eating nuts,
these like vegetables, those like grains.

Or perhaps the altered states of consciousness correspond to planetary metals, or to astrological signs. Or we could devise a scheme based on the organs of the body, or one based upon Jungian psychology. Some would call this last system "scientific."

It is very tempting to create a Cartesian system, with one or more axes, one axis perhaps a continuum from sedative to stimulant. With a second axis, representing heavily somatic to entirely mental, one could have a two-dimensional grid on which to place any number of substances. Roland Fischer, in *Science,* offered a "perception-hallucination" continuum that he claimed correlated to measurable EEG states.

My system is based on Leonhard Euler rather than Descartes. I look forward to someone's organizing plant allies on the enneagram, instead of on the pentagram, as I have done. Or perhaps on the five-element, eight-sided mandala of the I Ching, as Lama Govinda has explored. Or on the Kabbalah.

The astute lover of wisdom will contend that my arrangement
is not phenomenological at all, but
Pythagorean.

A nice draught of poison, that one!
We'll let it eat a little hole in our magic circle.

In any system, numbers emerge: perhaps ten, and twenty-one. Or seven. It's easy to get lost in rationalism: magic and physics are both thick with the Pythagoreans. When the talk is done, however, the ally is there, an objective correlative, as it were, waiting to set things straight. Where "straight" probably means crooked.

Striving with Systems to deliver Individuals from those Systems . . .
– William Blake, "Jerusalem"

DUBOISIA HOPWOODII

Common Names *Pituri*, pedgery, pitchery.

Related Species *Duboisia myoporoides, Duboisia leickhartii.*

Taxonomy Family: Solanaceae. A shrub, sometimes a small tree. The genus is endemic to Australia.

Part Used Leaves.

Chemistry Tropane alkaloids scopolomine and hyoscamine are present in *Duboisia myoporoides* and *D. leickhartii*. Most accounts therefore ascribe the same chemistry to *Duboisia hopwoodii,* but according to Pamela Watson (1983b) *Duboisia hopwoodii* contains nicotine and d-nornicotine. Moreover, the Australian Aborigines apparently did not use the other two species, so there is some confusion in the genus, chemically and perhaps taxonomically.

Chemical studies have shown that there is great variation in both the quantity and the relative proportion of the two nicotine alkaloids among individual specimens of *Duboisia hopwoodii*. It is probable that other alkaloids, such as tropanes, are also present in *D. hopwoodii,* as they are in the other species of the genus. Some species of *Duboisia* are grown commercially for scopolomine.

How Taken The leaves are roasted and chewed, often along with some ash of burnt acacia. The quid, or chaw, is passed around in a circle, from mouth to mouth, until everyone has had a sufficient chew. The last man in the circle places the quid behind the ear of the first. Pamela Watson points out that the skin behind the ear is rich in capillaries and is close to the brain, and would be an excellent place for transdermal absorption. And, in fact, the Aborigines claim just that – that placing the quid behind the ear strengthens the effects of the drug. Scopolomine patches today are placed behind the ear as a motion sickness preventative.

The leaves were also smoked. Smoking *pituri* may have been a postcontact technique.

Effects In smaller doses, *pituri* suppresses hunger and thirst and strengthens endurance. In larger doses, *pituri* produces detachment from time and space, hallucinations, and illusions. Its effects mirror those of tobacco in many ways. Like tobacco, in small doses *pituri* is used as a stimulant and mild tranquilizer. And like tobacco, it was a social plant, used in greetings, councils, and diplomacy. But certain effects are reported for *pituri* that are unusual for nicotine alone.

A number of early Australian explorers and scientists were given the opportunity by the Aborigines to try *pituri*. Here is a scattering of reports as to *pituri's* effects:

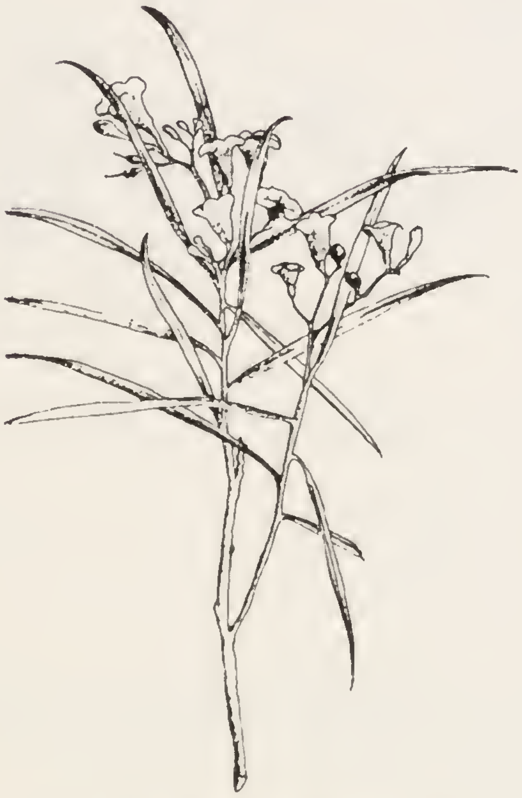
"Never fails to promote mirth and good fellowship . . . "
"Passed around from one to another as a token of friendship . . . "
"They go off into a daze . . ."
"Produces a dreamy voluptuous sensation . . . "

Pharmacology Nornicotine is more toxic than nicotine, so the difference between a psychoactive dose and a fatal dose is even smaller than for nicotine. The action is the same as the biphasic action of nicotine: affecting the transmission between nerves. It is not clear that the observed reactions are the result of the pyridine alkaloids alone. There is cause for some fresh analytical study of the genus.

History As tobacco has completely replaced *pituri* among the Australian Aborigines, ethnobotanists and ethnopharmacologists are dependent on extant written documents for information. All accounts agree that *pituri* was widely traded among the Aborigines. Ancient roads and trails mark the locations of *pituri* trees. The importance of the *pituri* plant is evident in the fact that the only written records kept by the Aborigines were marked sticks having to do with the *pituri* trade.

As poison, *pituri* was used to stupefy emus. Branches of *Duboisia hopwoodii* were bruised and placed in a waterhole. When the emus drank from the spring they were drugged enough to enable the Aborigines to catch them easily.

The Plant *Duboisia* is a xeric plant, adapted to the arid conditions of central Australia. Freely branching from the base, *Duboisia* grows into a hemisperical shrub three to four meters high. Evidently, although *pituri* grows over a large area of central Australia, only the *pituri* from one particular location was highly prized and traded. This *pituri* was gathered and cured by hereditary *pituri* clans.



DUBOISIA HOPWOODII

The curing process was the secret of the graybeards – the younger men were not privy. The one sketchy anthropological report states that a fire was built on sand and that when the fire burned low, the coals were raked away. *Duboisia* twigs and stems, picked *just at that moment,* were placed on the hot sand and covered, and left to steam for a very specific length of time. Too much steaming made the herb brittle, while too little left it "musty." The steaming time was known only, as I said, to the elders.

It is likely that the steaming halted enzymatic action, which would have continued degrading the alkaloids in the plant, even after picking. No analysis was ever done on *pituri* prepared in the proper manner. We also know that the natives burned the older branches off of the shrubs, in order to promote growth of new young twigs, which are higher in alkaloids. There may have been some selective propagation as well, favoring plants with the desirable balance of alkaloids and avoiding those too weak or too toxic.

Men returning from the *pituri* expeditions reportedly brought back seventy pounds of cured, dried *pituri* apiece, carried in a specially woven bag.

KILLING TIME

And to kill time while awaiting death,
I smoke elegant cigarettes, thumbing my nose at the gods.
– Jules Laforgue, "La Cigarette"

The cigarette is thoughtfulness: reflection and contemplation before action. We smoke to contemplate action, until the smoking and the cigarette become the action. And then that is what we do: we smoke.

I wrap his soul in mine and cradle it
within a blue and fluctuating thread . . .
– Charles Baudelaire, "The Pipe"

The cigarette is a prop, the flicking tail of a tree squirrel, Chaplin's cane, always ready to twirl.

Or a cool stance: cigarette hanging off the lip in the side of the mouth, sleeveless T-shirt. Sweaty.

Love, lust, loose morals,
a loose white blouse fallen off the shoulder –

Bad girl, bad boy, they break the rules,
they probably fuck, too. Rebellion, allure of the
forbidden.

Only soldiers, convicts, or sorcerers would take up the habit as an adult.

Kids smoke to feel grown up.
Adults smoke to feel like kids.

> *A cigarette is the perfect type of a perfect pleasure. It is exquisite, and it leaves one unsatisfied. What more can one want?*
>
> *– Oscar Wilde, The Picture of Dorian Gray*

A woman is only a woman, but a good cigar is a smoke.

Your loyal alchemist, in the depths of his fuming *athanor,* has by subtle means discovered what is quite possibly the fastest way to addict oneself to tobacco.

Quite a public service.

You need a cigarette holder, a razor blade, and some very strong cigarettes, such as Players Navy Cut. Cut off about half an inch of a cigarette with the razor blade, put it in the holder, and inhale it deeply. Hold the smoke in. For a novice one hit is an overdose.

How can anything so nauseating be so satisfying?

Be sure that you are sitting down if you try this. And have some cushions behind you: it'll knock you down pretty well, if getting knocked down is the sort of thing you enjoy. It lasts about half an hour. Then you get to do it again.

The poor man's crack.

You may think this all Saturnian. But I ask you: who but a fool would deliberately addict himself to nicotine? So we are dealing here with a subset of humanity, the set of fools. Since we are dealing with fools, no amount of wise advice is going to do any good. Legislation and criminal penalties don't even help. So why not just tell it like it is?

Ha ha ha. Now you have to kick.

Cigarette addiction is an expensive ally. The sacred weed costs us more than money: links to early death and illness are well established. It is reported that half a million people die from the direct or indirect effects of tobacco in the United States every year. The poor who smoke are able to buy less food, particularly with the rising "sin tax" levied against tobacco. People have to clean up the litter, which is substantial. Forests are cut to heat the flues to cure the leaves.

DEATH PRODUCES BOOKS, 1500

It's better to kiss cats and to chew on
their ears than to smoke cigarettes.

As of 1994, in a double farce, the tobacco companies are still denying that nicotine is addictive, and the federal Food and Drug Administration is just discovering that tobacco may be a drug. In order to achieve uniformity of product, tobacco companies first extract all the nicotine out of the tobacco, and then spray it back on. This practice, supposedly a shocking surprise to those who claim to be protecting us, has elicited charges that the tobacco industry is deliberately lacing their product with an addictive substance.

Why else would anybody smoke it?

Ah, yes,
tobacco, tobacco,
that brings a frown to my brow!

Yes, tobacco,
that brings a grin to my lips.

Inhaled smoke is the most quickly addicting form of tobacco, although perhaps not the most difficult to quit. Snoose, in particular, seems to be even harder to give up than cigarettes.

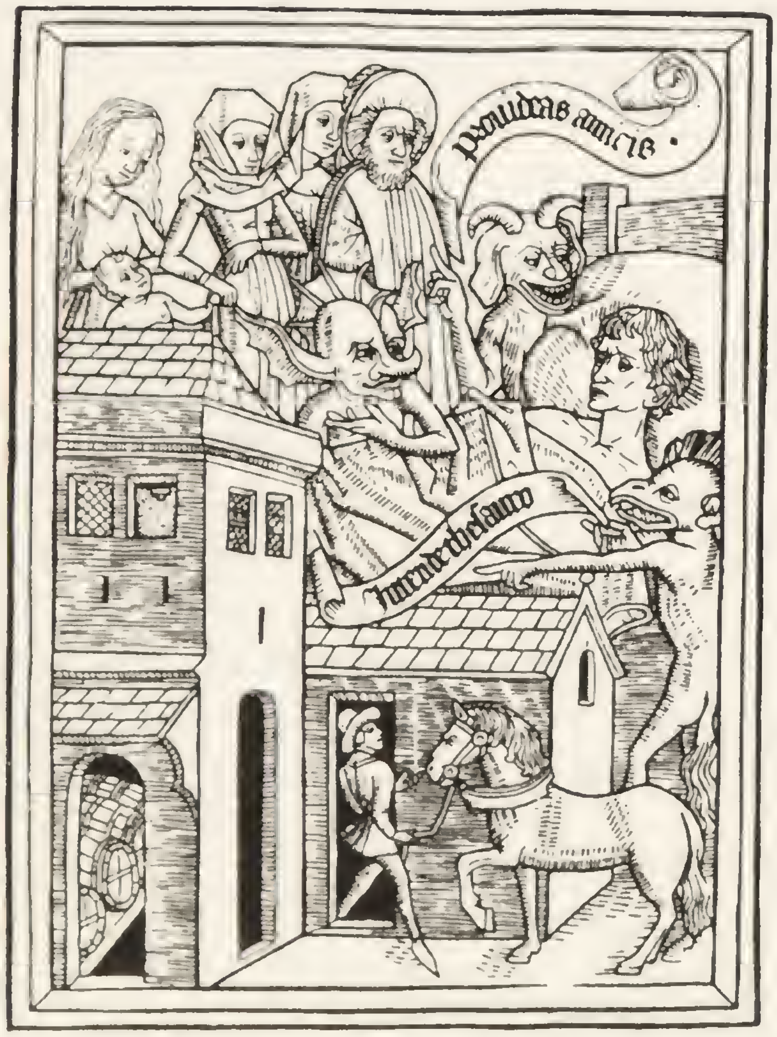
On a graph of addictions, tobacco is the most tenacious. Almost every junkie gives up narcotics after ten years. Almost everyone gives up cocaine, even crack.

> *That magic blend of fire and air, of spirit and death,*
> *breath made visible:*
> *this is your life, this is time, time incarnated,*
> *embodied so that you can watch it.*

Still, there are many who are able to play with the fire, to smoke when others are smoking, or when intoxicated with alcohol or marijuana, but never otherwise. These are people deserving study! We can learn more from them than from either the addicts or the abstainers.

> *When You Crave a Snack, Reach for a Pack*
>
> *– Lucky Strike advertisement, circa 1920*

The poison is habit, the sleepwalker. Smoke deliberately, never "on the side" or out of boredom. It is important to smoke for some particular poisonous purpose, not just because you have nothing else to do. You hold an ancient power, and it should be burned with all the reverence that its lineage implies.



THE ART OF DYING, 1450

> *Life is a cigarette:*
> *Cinder, ash, fire –*
> *Some smoke it quickly,*
> *Others with savor.*
>
> *– Manuel Machado, "Chants Andalous"*

I never denied cigarettes. Never recanted my love. Just refined the pleasure: bought samples of various different tobaccos for hand rolling. Bought a rolling machine. Experimented with herbal smoking mixtures. Mixed in tobacco. Gradually limited how many cigarettes I smoked. Finally to one a day. Gradually diminished the amount of tobacco in the smoking mixture. Finally didn't smoke at all. But not because I quit. Just because I haven't gotten around to it.

> *Only the revered cigarette, like "last words"*
> *and the Holy Cross, is privileged to share*
> *the last rites of the condemned.*

Tobacco is the blackness. The darkness.
Close your eyes.

INEBRIANTIA

> *Only with wine does the true self emerge,*
> *When the mind, like a cave, is empty of doubts.*
>
> *– Su Tung-Po*

When Mother and Father are away.

Or, if they are home, the inebriants send them upstairs to their rooms, to go to bed like children. Brothers and sisters follow the parents: the whole family scene falling away. Spouses and children. Friends.

The last vestiges of propriety depart.

So initially the inebriants are the rebel's ally: an insurrection in heaven and a return to the blood.

A return to "just do it." A return to what you desire, to beyond what you have been told you want, to what you really want. To do it. Yourself. Now. Leap, leap. License.

> *Sobriety diminishes, discriminates, and says no; drunkenness expands, unites, and says yes. It is in fact the great exciter of the* YES *function in man. It brings its votary from the chill periphery of things to the radiant core. It makes him for the moment one with truth.*
>
> *– William James, The Varieties of Religious Experience*

Thomas De Quincey, using a quote from Athenaeus, maintained that "most men are disguised by sobriety, exceedingly disguised," and that it is inebriation that brings out the "true complexion of character." Comparing the inebriation of wine with the euphoria of opium, De Quincey characterized wine as emphasizing the *human* qualities (he said that opium brought out the *divine* qualities).

All inebriants are solvents and general anesthetics. They all lead to unconsciousness. But each inebriant has its own agenda as to who goes to bed first.

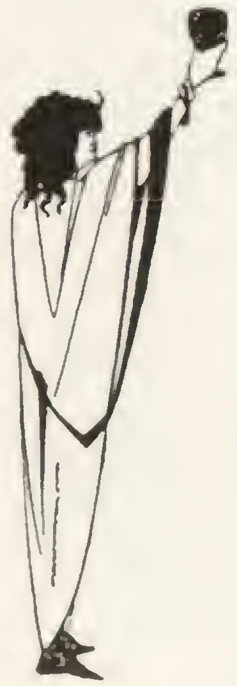
With alcohol the superego is the first to go. With nitrous oxide the first to leave is what we might call the *dimensional gatekeeper,* the mender at the wall who says "good fences make good neighbors."

Dizziness and passing out relate to inebriation, and such inebriation is usually our first glimpse into the liquid, slippery quality of consciousness. We spin around until we fall. We clutch the ground, now itself spinning, and spin around with it: the earth spinning, the horizon heaving, and the sky rocking all together.

> *We spin, we hyperventilate into a bag, we hold our breath, are squeezed by a friend until we pass out. We return to a land utterly strange, evoking memories half myth, half fairy tale. Up out of a tunnel-like darkness, something repeats, pulses: there is Time. Time is the primordial dimension. A strange and incredulous face gazes down at us from above, a face looking like something out of history, out of some past and colorful century. There are past centuries, there is a World, there is us, so there must be an I. I am on the floor. The face becomes familiar. Memory, it has come back. I remember. I passed out. I went away. But so far! To the other side, beyond bodies, planets, and gravity. Beyond immensity!*
>
> *And the returning: a long circular corridor of coupled rings, tubular passageways, each tube a stage in the phylogeny of consciousness. Light, then Form. Body, Time, and Place. Then particulars. Names. Relation, and Self-relation.*

Certain esoteric groups have maintained the ancient initiatory rites of inebriation. Once inebriated, the prospective initiates are closely scrutinized, the adepts watching for particular behaviors, by which they judge the suitableness of the aspirants for the path – whether they are to be admitted to the lesser or to the greater mysteries.

> *Liberation: singing and dancing,*
> *or, at the least, laughing, shaking a fist*
> *at the sun.*



BY AUBREY
BEARDSLEY, 1893

We wander through the inebriants as if visiting the Stations of the Cross, a different member of our party remaining behind in each alcove, our epiphanies ranging from the ecstatic to the terrible. The last stop is Golgotha, the Hill of Skulls.

> *The drunken consciousness is one bit of the mystic consciousness, and our total opinion of it must find its place in our opinion of that larger whole.*
>
> *– William James, The Varieties of Religious Experience*

SACCHAROMYCES CEREVISIAE

Common Name	Yeast.
Related Species	Other yeasts, certain bacteria.
Taxonomy	Yeast is a fungus. An ascomycete, to be specific.
Part Used	The excrement.
Chemistry	C_2H_5OH, ethyl hydroxide. AKA ethanol, ethyl alcohol.
How Taken	Through the mouth, as wine, beer, ale, mead, *chicha*, kvass, cider, koumiss, sake, pulque, and as an unbounded number of mixed drinks from the distilled spirits of same, including brandy, cognac, whiskey, rum, gin, vodka, bourbon, tequila, and mescal.
Effects	Analgesic, anodyne, stimulant, sedative, anesthetic, inebriant. Specific reactions seem to vary with body type and psychology, perhaps also with blood sugar level and other hormonal balances. Mesomorphs tend to become boisterous and aggressive, endomorphs expansive, sentimental, or maudlin. Ectomorphs, it is said, just get depressed.
The Plant	Ubiquitous: its conquest of the world is complete. It travels on dust, in the air. In cold climates it can winter over, if need be, in the ground, and then take to the air again in the spring, traveling on anything that flies. Many strains have been domesticated and are carefully nurtured by brewers and bakers. One variety of wild yeast colonizes the wax bloom right on the skins of grapes. Kind of like a message from God. . . . *I used to keep a sourdough going in my prospecting days, even when I was backpacking. I packed a lot of flour and had fresh bread every night. I mean little loaves of bread, real bread, not biscuits. I baked them in a sort of reflector oven rigged up with aluminum foil in front of the campfire. I never used any store-bought yeast. If I lost my starter, I just mixed up flour and water in a jar, left it open, and in a couple of days it would be bubbling and yeasty.*
Fermentation	Alchemically, fermentation is what changes the base metals into the *stone*. In fermentation, we are given a book on spiritual physics, the physics of poisons. All that is required is to see the signature clearly.

FROM DAS GOLDEN SPIEL, 1472

The food for fermentation is sugar, as it is also our food. The by-products are carbon dioxide and alcohol. If the plant is closed up in a restricted environment, it will die in its own excrement. We can take advantage of that.

> *And who will take advantage of us?*

It would be hard to find an older plant, a plant with a more ancient lineage, or with a simpler poison. The line between the vegetable work and the elementals blurs here.

Many great doctors have studied fermentation: Democritus, Pliny, Priestley, and Pasteur; Rilke, waiting for poems, and Bodhidharma, waiting for nothing.

> *God made yeast, as well as dough, and loves fermentation just as dearly as he loves vegetation.*
>
> *– Ralph Waldo Emerson, Essays*

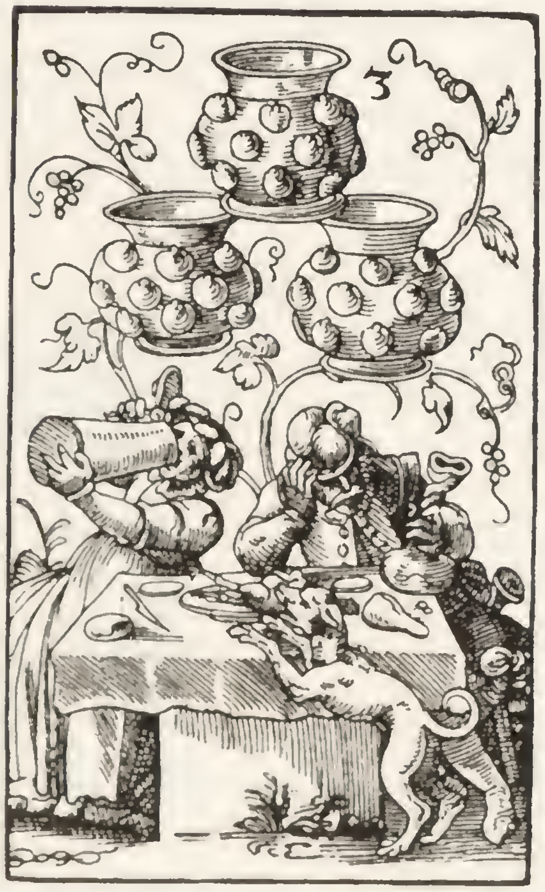
The Plant

No leaves. No flowers. No stems. No sexual parts nor gender. Perfect. Or a parasite.

> *Fermentation is oxidation, fire; it returns carbon dioxide to the atmosphere. The parasite: you build it up, I break it down. The poison called petroleum is from fungi; industrial civilization is the fermenting parasite.*

The Preparation

Fermented fruit drinks are generally called wines, while fermented grain drinks are called beer, or ale. At one time the term *beer* referred only to barley drinks to which hops had been added, while ale might be flavored and preserved with any number of other plants. Mead is made from fermented honey, and may be the most ancient of all inebriants. Some etymologists claim the Indo-European root *medhu-*, "mead," is related to similar roots in Akkadian, Hamitic, and other Mediterranean tongues, which would attest to great antiquity indeed.



FROM JOST AMMAN'S CHARTA LUSORIA, 1588

Fermented drinks are prepared from whatever is at hand: the Siberians ferment koumiss from mare's milk; the Mexican pulque is prepared from agave. It would not be incorrect to refer to these plants and substances as *admixtures,* a term we will use again in the section on ayahuasca.

The admixtures to *Saccharomyces* are a pretty classy lot. They include the leading citizens of the anthropophilic community, as well as many obscure plants with only local reputations. Among the better known are *Vitis* (the grape), *Hordeum* (barley), *Triticum* (wheat), *Malus* (apple), *Rubus* (blackberry, raspberry), *Prunus* (pear, peach, apricot, plum), *Zea* (maize), *Oryza* (rice), *Saccharum* (sugar cane), *Agave* (yucca), *Secale* (rye), *Solanum tuberosum* (potato), *Eleusine* (millet), *Taraxacum* (dandelion), *Manihot* (cassava, or manioc), and *Chenopodium* (lamb's quarters).

CORRESPONDENCES

ACTIVITY	Carnival
ANIMAL	Serpent, Goat
ARCHETYPE	The Vamp
ART FORM	Epic Poetry
BODILY FUNCTION	Digestion
BODY PART	Liver
BUDDHA REALM	Ratna
CHORD	Dominant
COLOR	Sapphire Blue
COSMIC ENTITY	Open Clusters
CRUTCH FOR	Inhibition
DIMENSION	Plane
DISCIPLINE	Poetry
ELEMENT	Water
FORM OF ENERGY	Wood Fire
FORM OF IGNORANCE	Avoidance, Forgetfulness
GEMSTONE	Opal
GEOMETRY	First Order Torus
GOD	Bacchus
GODDESS	Hathor/Ishtar, Ama-Gestin
GRAMMAR	Nondeterministic Finite State
HERO	Gilgamesh
HISTORICAL AGE	Iron Age

The Plant Yeasts are so ubiquitous that other plants have to hide their sugars, either by skin, by bark and cellulose, or by molecular structure (by storing the sugar as starch). Yeast has its own allies, however: enzymes. And at the right temperature the enzyme ally can convert starch into sugar.

Effects

The flowing bowl – whom has it not made eloquent?
Whom has it not made free, even amid pinching poverty?

– Horace

In vain I trusted that the flowing bowl
Would banish sorrow, and enlarge the soul.
To the late revel, and protracted feast,
Wild dreams succeeded, and disorder'd rest.

– Matthew Prior

Matters of State and Liberty

A drunkard is not profitable
for any kind of service.

– Plato

Laws against drunkenness in public are the oldest of drug laws, and the most widespread. For the Aztecs, drunkenness was a capital crime for members of the aristocracy, since they were then unfit to carry out official duties. Commoners were given more leniency.

The Ally

The ally's secret face is terror. The alcohol ally is like a slime, slow-moving, growing on you, at first only a fine veneer, like a slug trail. But later more layers collect, until you feel unclean. Feel your steps weighted. Feel every hour of the day a tedious distraction and ordeal. You finish as quickly as you can, so that you can return to your place among the rocks where the ally is happy and thrives.

The ally likes darkness. It doesn't like to move around a lot. A little feeding. Mostly it likes you, your body, your brain, your dreams. It likes a chair if you have one.

Once it's fed and watered, it tells you that you can leave your place among the rocks, that you can arise from your mossy boulders and enter the world of humankind, but you seldom do. At such times the growing weight of the layers of film that the ally has coated over you seems to lighten and soften. The mass becomes gelatinous and pliable, and you feel free.

Pain is banished or forgotten.

The world is light. You feel spontaneous. Problems are solvable or ignorable. And you can live like that for a very long time perhaps. For a very long time indeed. Maybe until you die.

Or maybe not.

Maybe the mass of stuff that the alcohol plant has deposited on you begins to harden. Maybe you haven't been able to feed it enough and the veneer has begun to crack. It's like the way the wine itself kills the yeast, its own mother, when the poison is fully formed. Then it is time for your friend across the table to unmask. He does, and you see that he is not there, that he has already departed. In fact, he has not been there for some years, or perhaps it is she. Only the coating, the facade deposited day after day by the poison, has been keeping you company.

In truth, you are totally alone, and frighteningly alone. And tonight, of all nights, you are out of food. A night like this, when you are alone and people that you don't want to talk to are knocking on your doors and windows. You are aware that soon they will abandon civility altogether and just force their way in.

Oh, it's got you now. By the balls, by the short hairs, got your tit in a wringer, it does. It's got the hold on you. It's got tiny wet sucking fingers, green fingers – it's the slime, and it's got you.

It's saying it is time to start paying your dues. It's saying that it is time to start feeling all that pain that has built up on you like a crust. It's saying that it is time to get back to work. To free your words. To face your children, your spouse, your divorce, the ruin of your life, or perhaps its success. That it is time to deal with the devil you have created. For they are all your creations, all of them. It is your own children that call to you.

It's a sneaky kind of plant, a patient kind of plant. It is glad to wait, to let you control it. It is always ready to talk or parley and negotiate. But note, the plant is a shrewd negotiator. It loves to make deals, but it always takes the first night for itself: you say to the ally, "OK, I'll spend tonight with you, but tomorrow night I spend with my family, and you stay locked up in the cupboard." It will always say yes to deals like this, but never to the converse.

It's a nightmare. It's a slime well. Every direction is uphill and it's all ice.

The ally says that it is time to deal with the devil you have created. It is your own creation, it is your art. It is, perhaps, gothic, but nonetheless there is an inner integrity to it. It is your genius, only your genius could have created such an elaborate prison for your own self. The ally is telling you you have built enough. Enough locks, enough doors, enough curtains and shades, bars and obstacles. They are all yours to burn.

Look upon it as the devil's firewood, and now you have a shed-full. Call it your "material" in the alchemical sense. So there is still cause for hope, for now you have a practice, you have a discipline, a path – a true path and an everyday path – probably what you were after from the beginning.

Sun doctors, of course, avoid this wonderful creative opportunity, if they can.

> *Took up with whiskey*
> *to drown my sorrows.*
> *All that's happened is*
> *they've become*
> *better swimmers.*
>
> –*Steve Sanfield, A New Way*

VITIS VINIFERA

Common Names Grapevine, wine.

Related Species Almost any sugary or starchy fruit or berry.

Part Used The fermented juice of the fruit.

Chemistry Ethanol, ethyl alcohol.

How Taken Best drunk with food, but by drunks drunk almost any way.

Effects The first glass warms and gladdens, the second inspires poetry and seduction. The third glass evokes boasting, the fourth glass stumbling; the fifth glass stupor, and sleep.

The Plant We choose wine as the symbol for *inebriantia,* and the grape as its type plant. In this we mean no slight to Demeter and her grains. It is likely that beer is the more ancient beverage. But wine has a mythic quality that beer lacks. Jesus' blood is wine, and wine is the blood of Dionysus. Wine is the secret medicine of Osiris. A wineglass is a chalice, and if the Grail once contained mead, surely anything but wine in it now would surprise us. The color of wine is so rich and distinctive that we use it to name other colors, and if we need to refer to the redness of wine by another name we often invoke gemstones. Life is toasted with wine, and life (*vita*) is homophonic to the name of the vine itself.

Changing water into wine was Jesus' first miracle.

History The oldest known evidence of wine is from residues found in the area of the southern Caucasus and Anatolia, what is now Georgia, and dates to about 4000 BC. Telltale tartrates from lees, identified by infared absorption spectroscopy, still cling to the bottoms of large jars and urns. By 3500 BC, in early Sumerian times, wine and vinicraft were already well established in Mesopotamia. And in those ancient Sumerian beginnings of the class struggle, the excavations show that wine was drunk only in the wealthier households, beer being the beverage of commonty.

The words *wine* and *vine* are cognates, as is the Greek-derived *oenology.* According to Eric Partridge, neither the Latin nor the Greek words are of Indo-European heritage. Rather, both seem to share a common root with other Mediterranean Semitic and Hamitic cognates, probably in the Caucasus. In Georgian, a Caucasian language whose only known relative is Basque, the word for wine is *qvino.* And the traditional symbol for Mother Georgia is the grapevine. In Sumerian mythology, the Tree of Life is a grapevine.

As ancient as wine is, however, beer is probably older, as attested by brewers slops found on Neolithic middens. As Edgar Anderson says, man was a brewer before he was a baker. Some believe that brewing was the impetus behind the domestication of grains. The domestication of grains made possible living in cities, and it was living in cities that made possible imperialism, police, and slavery, which, in turn, led to writing, which led to, well, we all know: our present dilemma.

Civilized drinking (drinking in specialized places of business) prompted the first drug laws. Hammurabi made it a capital offense for priestesses to open taverns or to go to them with the intention of drinking. It was likewise a capital crime to operate a drinking establishment where treason was plotted, without reporting it. Stiff stuff, even by modern standards. While the prohibition against priestesses drinking was probably religious, the latter law is clearly more concerned with politics and hegemony than with morality.

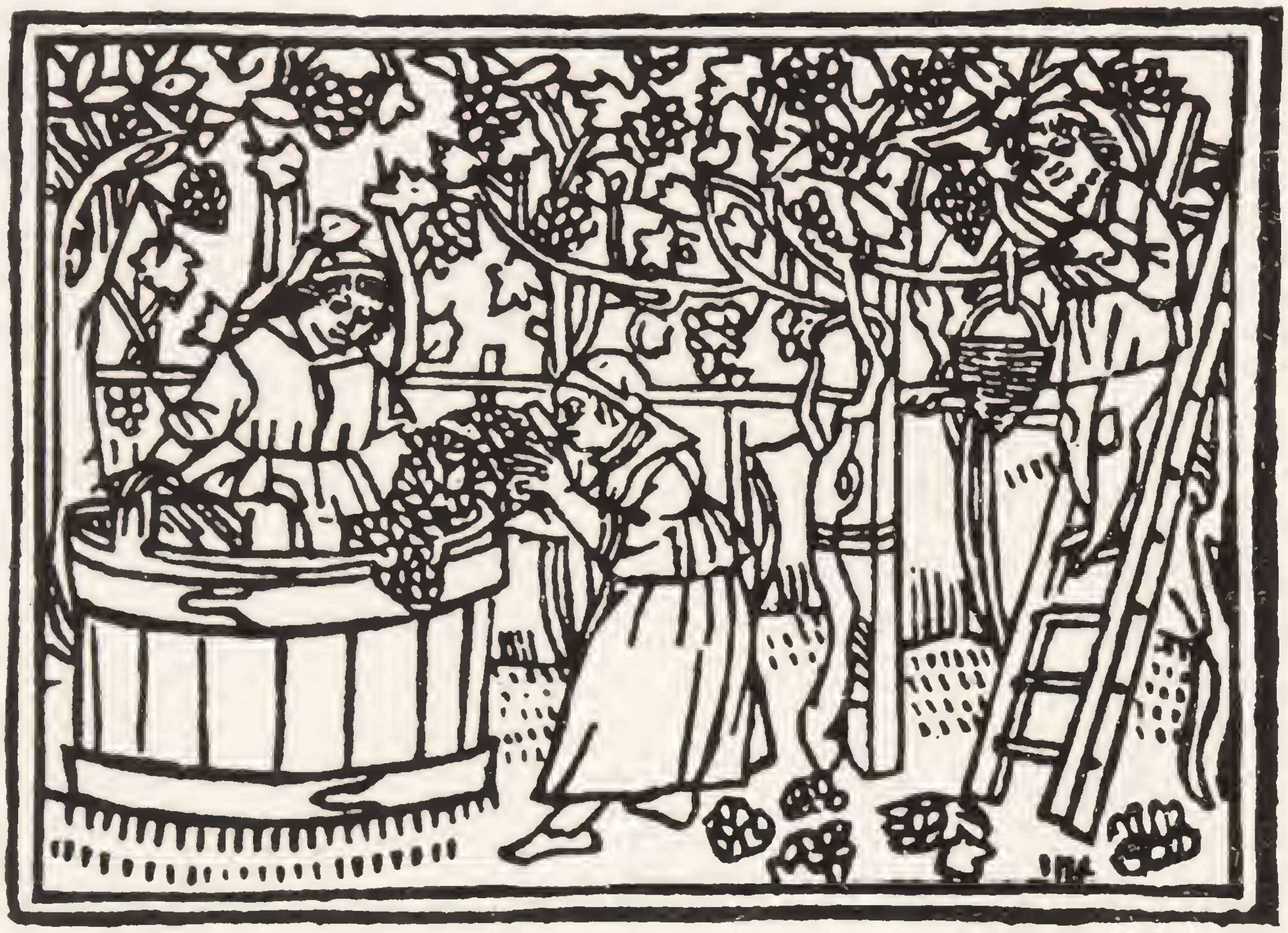
Egyptian records of the same period depict guests at banquets vomiting into basins held by servants. There are records of a father warning his son of the evils of following the bottle instead of a career, and of a woman who, being given a reward, asks for eighteen bowls of wine, because she "loved drunkenness." Wine, as well as beer, was sacred to Hathor, the cow-headed goddess who had been slaughtering the race of mortals until Ra pacified her with drink. She was worshipped with a monthly Day of Drunkenness to commemorate the event.

The Egyptians were beer people, but we also know a great deal about their wines, through written records, paintings, and archaeological finds. By the Fifth Dynasty, if not before, they were producing both white wine and red wine, which were named the left and right eyes of Horus, respectively. The white wine was said to be the better. Then, five thousand years ago, as now, wine jars were labeled with distinctive seals.

Winemaking was probably discovered by a woman. In Sumer, the goddess Ama-Gestin was the keeper of the grapevine. Egyptian Isis conceived Horus by eating grapes. In the *Epic of Gilgamesh,* the wild man, Enkidu, is given his first wine by a "temple woman." When Gilgamesh, seeking the Tree of Life, comes to the garden of the gods he finds trees with "fruit of carnelian with the vine hanging from it." Siduri, priestess of Ishtar and the maker of wine, sits veiled in the garden with golden bowls and golden vats, given her by the gods.

> *According to the Persians, wine was discovered by a woman who was looking for poison. King Jemsheed discovered that his grape juice had gone bad, and accordingly labeled the jar as "poisonous." A woman driven to suicide by sick headaches found the jar and drank a large cup, expecting to die. Instead she fell asleep, and awoke refreshed.*

The first wine may have been date wine or raisin wine: wild dates contain enough sugar for fermentation, while wild grapes, *Vitis sylvestris,* do not, unless they are dried. The migration of wine parallels the spread of storage and drinking vessels, whether bronze or pottery.



FROM CRESCENZI'S LIBRO DELLA AGRICULTURA, 1511

How to Use

A night of serious drinking requires some planning. It requires some food.

> *Beginning with hors d'oeuvres, some drinks, then a dinner, a chicken, perhaps, then drinking and talking late into the night, sharing the soul and the heart, getting down to all of it, confessions, revelations, insights, gossip, all of it flowing from the wonderful bowl . . .*

What else is life for, if not to share words from the heart, and how better to free them than with the proper company and the proper wine at the proper pace?

Wine gives breath to the periphery and to the repressed – to the shadows and the ghostly lurkers at the threshold of consciousness. Wine doesn't evoke numinous wheeling dynamos like the *phantastica,* but it does touch the *humanly* deep, the personally poignant, and can loosen sorrows stuck long in the craw.

Does wine heal? Not by itself, but sharing your heart with a friend is not a bad start.

> *Wine that maketh glad the heart of man.*
>
> *– Psalm 104:15*

CORRESPONDENCES

HUMOUR	Phlegmatic
IMAGE	Chalice
LANDSCAPE	Valley
LOGICAL OPERATOR	Or
MACHINE	Internal Combustion Engine
METAL	Tin
METAPHOR	License
MINERAL	Lapis Lazuli
MUSICAL INSTRUMENT	Flute
MYTH	Dying God
MYTHIC HERO	Orpheus
NUMBER	Irrational Numbers (Surds)
OCCUPATION	Prostitute, Hetaira
OUT-OF-BODY REALM	Realm of Reckless Abandon
PERIODIC TABLE COLUMN	Oxygen Column
PHASE OF COITUS	Seduction
PHASE OF MATTER	Liquid
PHYSICAL CONSTANT	G, Gravitational Constant
PLANET	Jupiter
PLATONIC SOLID	Octahedron
POISON	Jealousy
PROPORTION	Arithmetic Mean
QUARK	Charm

FROM MATTIOLI'S COMMENTAIRES, 1579

Texts

Fire proves the treasures of the mine,
The soul of man is proved by wine.
– *Theognis*

Bad wine is like bad men,
Deadlier in attack than arrows or knives.
I collapse on the platform;
Victory hopeless, truce will have to do.
The old poet carries on bravely,
The Zen master's words are gentle and profound.
But I'm so drunk the words he speaks
Only blur in a red and green swirl.
– *Su Tung-Po, "Bad Wine Is Like Bad Men"*

LOVERS AND FOOL
IN GRAPE ARBOR

If wine were to disappear from human production, there would, I believe, ensue a vacuum, a lack, a flaw far more appalling than all the excesses and deviations for which wine is made responsible.
– *Charles Baudelaire, Artificial Paradise*

with lute and book and pen and ink
I'll make my living
who cares for fame, or glory
I'll gab with fishermen and woodsmen,
drink together to the scattering clouds
no way I'll ever stray home sober.
– *Anonymous, Yuan Dynasty*

In wine I stumbled on unexpected joy.
– *Su Tung-Po*

I shall light up your aged wife's eyes, the old companion of your everyday cares and your oldest hopes. I shall soften her glance and drop into the pupil of her eye the lightning-flash of her youth.

I shall sink into your bosom like a vegetable ambrosia. I shall be the seed that fertilizes the laboriously cut furrow. Our close reunion will create poetry.
– *Charles Baudelaire, Artificial Paradise*

History

We may have first learned the secret of drinking alcohol from animals. The ancient Greeks believed thus, and a legend told that people first learned to drink from the apes. Studies show that chimpanzees and other apes do indeed like alcohol, and get drunk. Many animals seek out intoxicants, and most will partake of them to excess, given the chance. Perhaps the most common example in temperate zones is birds drunk on fermented berries, wheeling about, crashing into the ground, and generally making fools of themselves. And while recent experiments by Ronald Siegel suggest that some or all of the intoxication may be due to secondary substances in the berries rather than alcohol, anyone witnessing the event might thereafter try the berries for themselves.

David Livingstone reported how African elephants sought out fermented palm fruits, sometimes traveling unusual distances to find and ingest them. And they did get intoxicated, staring off, trumpeting loudly, and separating out from the group.

CORRESPONDENCES

QUANTUM FORCE	Proton
REALM OF PLEASURE	Genitals
RITUAL EVENT	Marriage
ROCK	Limestone
SEASON	Autumn
SENSE	Touch
SEXUAL POSITION	Belly to Belly
SIGN	Lyra
SIN	Lechery
SOCIAL EVENT	Orgies/Dancing
TAROT KEY	High Priestess
TIME OF DAY	Evening
TOOL	Bow
VIRTUE	Charity
VOWEL	High Front: i

Ethnography

The Romans reported that the Gauls were so fond of wine that they would trade their children for it. That they went crazy when they drank it, running about in frenzy and fighting each other.

> *An Italian man lived next door to us with his family. All through the fifties he vinted his own wine. I can remember the odor of the fermenting grapes occasionally wafting over the fence. My family were all teetotalers, so it was all very mysterious. The kids called the daughter "pink toes."*

The early Romans themselves were on the temperate side, and women were completely forbidden to drink on grounds that it led to lust and adultery. In later

Roman history, both sexes seem to have embraced excess in wine – twenty-five million gallons a year – for exactly the same reasons.

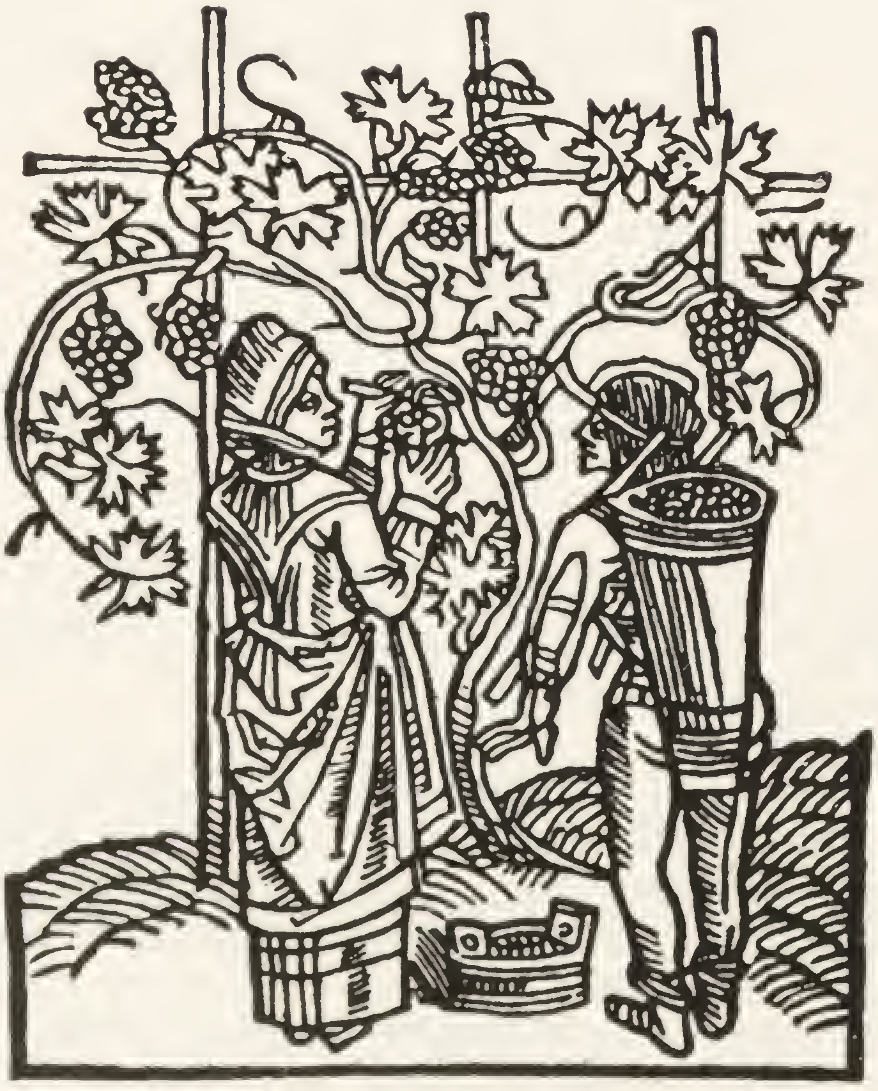
Buttery, good oak, with vanilla and apple –
a gold-medal chard, pineapple and melon . . .
a classic cab: rich and full bodied;
fruity, but with tannins; cherry and clove,
unbelievable
spice, good acid, hints of plum,
a great zin, or with bass notes, merlot . . .

The Greeks, by classical times, appear to have been heavy drinkers, despite their reputation for moderation. When the Scythian philosopher Anacharsis visited Athens in 600 BC he was somewhat repelled by the behavior he witnessed. He said that there were three kinds of grapes, one for pleasure, one for drunkenness, and one for disgust.

Hide our ignorance as we will, an evening of wine reveals it.

– Heraclitus (Davenport 1981)

When asked how to avoid excess in wine, Anacharsis advised observing those who did not. The Scythians themselves had no wine. They smoked hemp.



FROM CRESENZI'S OPUS COMMODORUM RURALIUM, 1493

HORDEUM VULGARE

Common Names Barley, corn, malt. Ale, or beer, when fermented.

Related Species Any cereal or starchy tuber. Especially rice, maize, wheat, cassava.

Taxonomy Barley typifies an important tribe of the Poaceae, the Hordeae, which includes wheat and rye. The family is of recent evolution, as plants go. Grasses did well in the Miocene.

Part Used The seeds: roasted, cracked, mashed, and fermented.

Chemistry

$$\text{Starch} \xrightarrow{\textit{(enzymes)}} \text{Sugar} \xrightarrow{\textit{(yeast)}} \text{Alcohol.}$$

How Taken Drunk. With gusto.

Effects Refreshing and relaxing, a good catalyst for fun or trouble, for mixing or for mixing it up. Overheard in southern Louisiana:

> *There are only three things to do in life: drink Schlitz beer, fight in bars, and listen to Cajun music.*

Aristotle noted that wine drinkers fall on their faces when drunk, but that beer drinkers fall on their backs.

> *Inspir'd by thee, the warrior fights,*
> *The lover wooes, the poet writes,*
> *And pens the pleasing tale;*
> *And still in Britain's isle confess'd*
> *Nought animates the patriot's breast*
> *Like gen'rous, nappy Ale.*
>
> *– John Gay, "A Ballad on Ale" (in Digby and Digby 1988)*

Pharmacology Besides alcohol, beer contains an admixture, *Humulus lupulus,* hops. Herbalists use hops as a soporific and as a digestive tonic. Brewers use it because of its bactericidal properties, to stop bacteria from growing in beer. It is effective in all of those areas. Hops are *very* bitter.

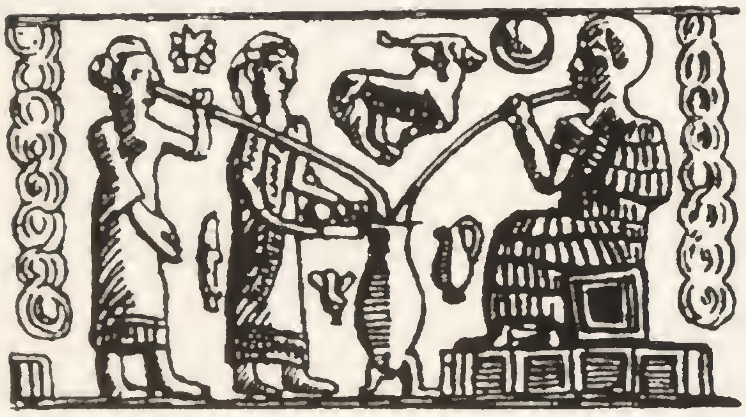
The Plant Barley is probably the oldest cultivated grain. Edgar Anderson states that barley was dispersed from two centers, one in Abyssinia and another in Nepal or Tibet. Paleoethnobotanists have discovered domesticated barleys and emmer wheat in a prepottery Neolithic level at Jericho, in Palestine, dating to about 8000 BC. This may be the oldest cultivated grain to have been dated. Other Near Eastern digs of the same date have revealed only wild grains. (In the New World, however, there is some evidence that amaranth was cultivated – certainly it was gathered – before 8000 BC.)

Most paleoethnobotanists now agree with Anderson that the oldest cultivated plants were originally camp followers. Human beings leave distinctive scars upon the places they live, and a community of plants evolved to take advantage of those scars. Barleys such as the foxtail are well-known and aggressive members of that anthropophytic community (we call them *weeds*).

> *úcchrayasva bahúr bhava*
> *svéna máhasā yava*
>
> *Rise up, become abundant*
> *with thine own greatness, O barley*
> – *Atharva Veda*

History

Beer has been the working man's drink for at least fifty centuries. The Romans, being bosses more than workers, didn't care for beer very much and spoke disparagingly of those who did. They characterized the Gauls as getting drunk on "spoiled grain." In addition to Celtic peoples, the Germanic tribes, including the Angles and Saxons, have favored beers and ales since ancient times. Beowulf drank ale, and the alehouse is the setting for much discussion and laughter, complete with a queen acting as barmaid. Gallic beers were called *cerevisia*, or some other cognate of Ceres (the goddess). The etymologies of the words *beer* and *ale* are evidently not completely settled, but it seems likely that *beer* is akin to an Old Norse word, *bygg*, meaning *barley*.



BEER TASTERS, SEAL OF HAMMURABI, 1913 BC

Ale comes from the Indo-European root *alu-*, relating to magic, sorcery, possession, and visions, and is cognate with our word *hallucinogen*. The German root is **alutha*, meaning "bitter," *aludoimos* in Greek. The characteristic bitterness of ale is evident in another cognate word, "alum." Bitterness and ale seem to go together.

Many other bitter plants besides hops have been used as admixtures in fermented malt beverages, including ground ivy, wild rosemary, wormwood, yarrow, and henbane. Many of them are psychoactive. Henbane, containing hallucinogenic tropane alkaloids, is especially potent. In German, henbane is *Bilsenkraut*, the *pilsener krut*, the plant used to brew pilsner. Henbane beers were common in Sweden until recently. The famous German purity act of 1516 was particularly directed against henbane and is really the first antidrug law of the modern era.

The Egyptians had words for more than eighty different kinds of beer, differentiated by the different plants and herbs mixed into the wort. Most of these beers were medicinal: beer seems to have been used as a carrier for other medicinal herbs.

The earliest known brewery is dated to 3500 BC, in a Sumerian trading post on the Silk Road in the Zagros Mountains.

And malt does more than Milton can
To justify God's ways to man.
– A. E. Housman, "Terrence, This Is Stupid Stuff"

Calvert Watkins (1978) has uncovered philological evidence for an ancient Indo-European barley-ritual in the Odyssey, in the Homeric Hymn to Demeter (and thus in the Eleusinian mysteries), in the Vedas, in Hittite sources, and in the Avesta. Common features of the rite as described in each of the above sources are that the barley potion is drunk, that it is prepared or mediated by women, that it is a mixed potion, that it contains, in addition to barley, water, at least one other plant, and also milk or soured milk. Honey and wine also are often ingredients. Further, drinking the potion is described as inducing a feeling of well-being in which quarrels can be patched up and forgotten.

David Flattery (Flattery and Schwartz 1989) believes that the "other plant" in the mixture is *Peganum harmala,* known as *haoma,* or soma. The details of the preparation of the drink indicate that it was not fermented. Rather, and more significantly, the steps of the preparation closely match what Albert Hofmann outlined as the steps necessary to prepare an entheogenic lysergic acid amide drink from ergot-infested grain.

I am a yogi who drinks beer, because
It illumines the Diamond Body,
Completes the Enjoyment Body,
And gives form to all Emanation Bodies.
– Milarepa

Poesis

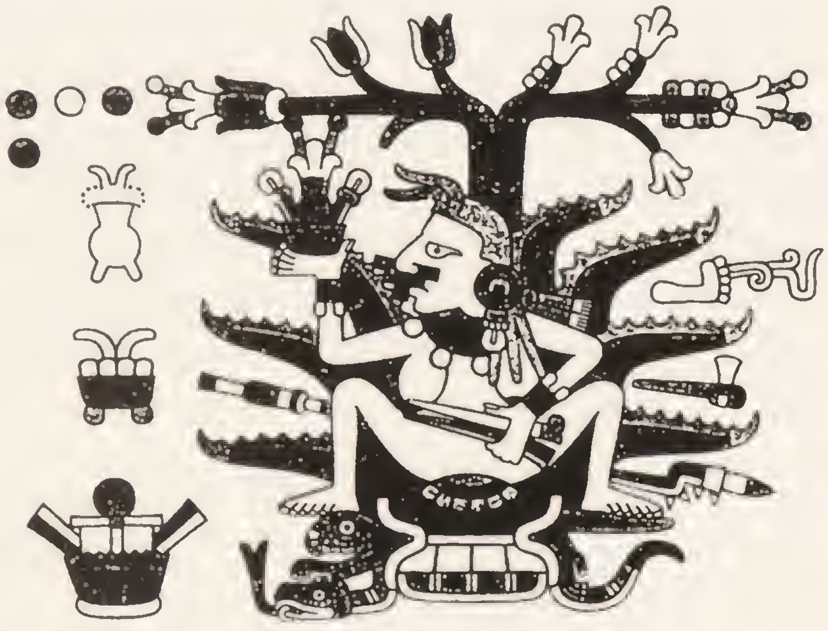
The brewing of beer is more complex than the vinting of wine. The reason is that while grapes contain sugar, ready for fermentation as soon as the grapes are crushed, barley contains starch. Starch must first be converted into sugar before it can be fermented. This process is called *mashing.*

HOPPE-GARDEN, FROM SCOT'S A PERFITE PLATFORME, 1576

To prepare the grain for mashing, the barley is first sprouted and then roasted. Darker roasting produces stouts and porters. After the grain is roasted, it can be cracked, that is, broken into small pieces. The malt (the cracked barley) is mixed with hot water, and has to be kept between 145°F and 155°F for several hours. The temperature is critical to two enzymes, cytase and diastase. Cytase dissolves the cellulose that coats the starch granules, and diastase converts the exposed starch into maltose sugar. If human beings produced these enzymes within our bodies, we could, like Nebuchadnezzar, eat grass and save ourselves a great deal of trouble.

Once the wort is mashed, it is taken off, strained, and boiled with the admixture, usually hops. Varying the admixture can produce many interesting and curious brews. Ground ivy was used as an admixture before hops, and the term *beer* was used to distinguish the hops beverage from the other ales. The use of hops in beer was actually prohibited in England by an act of Parliament in 1528, four years after its introduction from Holland. The prohibition was not successful.

Other admixtures, in addition to those mentioned above, included mushrooms, bay leaves, and *Papaver somniferum* (the seeds, possibly more). I've brewed a wonderful soporific and sedative ale with *Brickellia californica,* a bitter chaparral plant that blooms with a penetrating sweetness in the summer moonlight. I've also brewed spruce beer, though, in my case, the admixture was actually Douglas fir. Spruce beer is refreshing and stimulating. A word of caution, however. Don't overdo it with the pine oils. A friend once brewed up a wickedly strong spruce beer with Sitka spruce that gave him intense subdermal itching and burning for some very uncomfortable hours.


GODDESS OF PULQUE, FROM THE CODEX LAUD

Other innovative admixtures to beer that I've heard of include *Cannabis sativa,* actually a close cousin to hops, ginger, dandelion, and nettles. Exotic plants like coca might come to mind, though in the case of coca, apart from its currently illegal status, history has shown that coca goes better in soft drinks, or in wine, than in beer. Above all, it is flavor that is important – you want enough bitters to balance any sweet or herbal flavors. Since most alkaloids are bitter, some imagination and inspiration might concoct some pretty hair-raising ales – if that's the sort of thing you enjoy.

Once the admixtures have been infused, fermentation proceeds much the same as for wine.

> *O guid ale comes, and guid ale goes.*
> *Guid ale gars me sell my hose,*
> *Sell my hose, and pawn my shoon;*
> *Guid ale keeps my heart aboon.*
>
> – *Robert Burns*

Pulque is a Mexican beer brewed from agave cactus. I've heard that the bottled beverage of the same name is far inferior to the pulque brewed in large communal vats in the villages. The effects of the latter were reported to me as "a cross between mescaline and opium."

almost enough to hop on a plane for Mexico . . .

Jaime de Angulo liked pulque.

In equatorial America the natives brew *masato* or *chicha* from the manioc (cassava) plant. Those preparing the *chicha* first chew the tubers and then spit them into a large kettle or tub. Other plants are added, such as banana or some other fruit. Sometimes maize is chewed and added instead of cassava. The tropical warmth sets up fermentation almost immediately, and the first cups are dipped from the ripening mixture after one or two days. More water is added to the mash as fermentation proceeds. *Chicha* is rich and nourishing, tasting slightly like a soured kefir. It can also be somewhat chewy, the cassava being so fibrous. *Chicha* is the comfort beverage of the tropics. It is drunk for strength against the heat, for protection from fevers, and for general spiritual well-being. The alcoholic content, at least for the first several days, is kept low by continued dilution with water. If the *chicha* gets really strong it's time for a party.

Effects

> *They who drink beer will think beer.*
>
> – *Washington Irving*

Organoleptic Methodology

About five beers can be tasted at a sitting. You need two sets of five identical glasses, a friend to taste with, and a trusted accomplice to pour and number the glasses. It is most important that all of the beers be at the same temperature. It is also important that the controller not screw up the labelling.

The controller should pour the glasses out of sight of the tasters, and should note in writing which brand goes with which number. You will want some mild food to cleanse the palate between tastes.

After tasting each beer, try to characterize it in writing. Record which of the numbered beers you like and why. When you are done and have picked a favorite, compare notes with your friend. Finally, have the controller reveal the brand names of each of the numbers. You'll get some surprises. One friend of mine who had loudly declaimed the superiority of Heineken over Becks selected them in precisely the opposite configuration in the blind tasting.

For tasting, it's best to choose beers all of a class: Mexican lagers, Low Country pilsners, English ales, American premiums, like that. No point in comparing Coors to Anchor Steam.

HOP PLANT, FROM DODONAES'S PURGANTIUM, 1574

AQUA VITAE

Common Names Alcohol, neutral spirits, booze, the Water of Life.

Related Substances Wood alcohol, CH3OH, methylated spirits. Numerous other alcohols: propyl, isopropyl, butyl. Also, the simplest alcohol of all, hydro-alcohol, the universal solvent, HOH.

Chemistry Ethanol: C_2H_5OH.

How Taken Drunk. Imbibed. Sipped. Slugged. Guzzled. Tipped. Lifted. Slurped. Swilled. Chugged. Etc.

Taxonomy Hydroxyl group, OH. The proton forces hybridization of the oxygen bond, to sp^3. While the hydrocarbon end of the molecule is unpolarized, the hybrid bond polarizes the hydroxyl end. This combination of both polarized and unpolarized parts of the alcohol molecule accounts for its remarkable versatility as a solvent.

Alcohol and water together are less than the sum of the parts: seventy milliliters alcohol plus thirty milliliters water give you only ninety-six and a half milliliters of 140 proof vodka. The molecules commingle: protonated oxygens take Pauling bonds – close-packing, 109 degree angles.

Alcohol is a liaison, mediating between water and oil, between the inorganic world and the organic, between carbohydrates and hydrocarbons.

Pharmacology Extensively studied. Almost all of the alcohol ingested is metabolized, only a small fraction being excreted – this through the skin and lungs and in the urine. Alcohol is metabolized by oxidation at a constant rate independent of the amount of alcohol ingested. The human body burns about one-third to one-half an ounce of alcohol per hour. That's a little less than one average drink per hour. If you drink more than that, the alcohol accumulates in your bloodstream, and you become more intoxicated. Exercising or drinking coffee does not appreciably affect the rate of combustion, nor do any known drugs. The combustion rate of alcohol in the body seems to be a constant of human physiology.

The first stage in the oxidation of alcohol takes place in the liver, where alcohol is oxidized by an enzyme to yield acetaldehyde. This toxic substance disperses throughout the body, where it is further oxidized to form acetic acid, vinegar. Coenzymes lyse away another hydroxyl group from the acetic, and the result ultimately yields energy, carbon dioxide, and water.

Alcohol depresses synaptic transmission. The characteristic loosening of inhibitions may occur because the neurons responsible for inhibition, assuming such exist, are depressed before the others. Alcohol raises the testosterone level in women, which accounts for some of alcohol's aphrodisiacal properties.

Methyl alcohol, also called wood alcohol, has a different metabolic pathway. Methyl alcohol is burned only very slowly. Whereas all the ethyl alcohol from a drinking bout is metabolized within twenty-four hours, the same amount of methyl alcohol may take a week or more to be burned off. It might seem that drinking wood alcohol would be an inviting way to stay drunk. Unfortunately, one of the metabolites is formic acid, a cellular toxin whose perniciousness goes far beyond many of those that we will discuss here. Methyl alcohol is present in Canned Heat. Straining Canned Heat through a chamois, the old hobo trick, removes the paraffin, but not the methylated spirits.

Ethanol, drinking alcohol, is far from harmless. Alcohol is a protoplasmic poison. It kills bacteria, animals, and plants, even the plant that produces it to begin with. The most effective concentration for a germicide is 140 proof, or 70 percent alcohol. This is the concentration used in doctors offices as a disinfectant. Pure alcohol is less effective, evidently because it gelatinizes the cellular walls of the targeted microbes.

The toxicity of medicines and poisons is commonly expressed as the *LD50,* the "lethal dose for 50 percent." Usually measured in grams per kilogram of body weight, it signifies the amount of the substance necessary to result in death for one-half of the unfortunate test subjects. The *relative* safety or danger of a drug is denoted by its *therapeutic index,* its margin of safety. The therapeutic index is the ratio of the drug's LD50 to its effective dose, the dose necessary to produce the desired effects. Since both the effective dose and the LD50 are in grams per kilogram, the therapeutic index is a pure number. The larger the therapeutic index, the safer the drug.

The therapeutic index of alcohol is only about five. That is, five times the amount needed to get you high can kill you. This puts alcohol, as recreational drugs go, into the "highly dangerous" category. To illustrate: if your child were going to overdose on a drug as some rite of passage, say, turning twenty-one, would you rather he or she overdose on alcohol or on marijuana? Either/or is not the point of course. The point is that merely by drinking too much alcohol too quickly, even once, you can die. Even cigarettes are safer than that.

Alcohol is absorbed readily from the intestines into the bloodstream, less readily from the stomach. For this reason, eating food while drinking retards the effect of the poison, because it keeps the alcohol in the stomach longer. Milk, meat, cheese, and egg products are particularly effective for this.

Very strong liquor causes the stomach to close up. The fastest absorption of alcohol in the stomach is at a concentration of between 10 percent, like wine, and about 35 percent, or 70 proof. The absorption is facilitated by a basic condition in the stomach, such as produced by soda water, or by the bubbles in champagne.

Habituation and addiction are generally long-term processes. Nonetheless, 15 million Americans, one-tenth of the adult population, are either addicted or seriously debilitated by alcohol. Further, alcohol is creating a serious economic problem in developing countries, as commercial beverages replace the homebrews. The cost of two bottles of beer may be half a day's wage.

Effects

> *Nor have we one or two kind of drunkards only, but eight kinds. The first is ape drunk, and he leaps and sings and hollers and danceth for the heavens. The second is lion drunk, and he flings the pots about the house, calls his hostess whore, breaks the glass windows with his dagger, and is apt to quarrel with any man that speaks to him. The third is swine drunk – heavy, lumpish, and sleepy, and cries for a little more drink and a few more clothes. The fourth is sheep drunk, wise in his own conceit when he cannot bring forth a right word. The fifth is maudlin drunk, when a fellow will weep for kindness in the midst of his ale and kiss you, saying "By God, Captain, I love thee; go thy ways, thou dost not think so often of me as I do of thee. I would, if it pleased God, I could not love thee so well as I do" – and then he puts his finger in his eye and cries. The sixth is martin drunk, when a man is drunk and drinks himself sober ere he stir. The seventh is goat drunk, when in his drunkenness he hath no mind but on lechery. The eighth is fox drunk, when he is crafty drunk as many of the Dutchmen be . . .*
>
> *– Thomas Nashe, 1592*

Or like the T-shirt I saw that said INSTANT ASSHOLE: JUST ADD ALCOHOL.

History

Legend ascribes the discovery of distillation and of aqua vitae to the alchemist Geber. Geber, whose proper Arabic name is Jábir-ibn-Hayyán, was born in the year 702. He was probably a Mesopotamian, though some have said he was a Greek who converted to Islam. The word *alcohol* is derived from an Arabic word for the fine antimony powder that women used to stain their eyes. The gist of the meaning is that it is *the finest essence*. By another tradition an Arabic alchemist named Rhazes was the discoverer of alcohol. Either way, both alchemy and chemistry flow to us through Baghdad.

The essential principle underlying the discovery is that the intrinsic power within the plant, or in this case within the wine, is an entity that can be extracted and collected with tools and the proper ritual. Nothing really new there, from a shamanic standpoint, other than the nature of the tools themselves: a retort instead of a bull-roarer, and a furnace instead of a drum.

> *Not the wine, but something within the wine.*

And imagine the excitement when they found it: a clear, light liquid like water but not water – finer than water, more sparkling than water. It was the essence, the quintessence, the vital principle of the wine. And they named it *water of life:* a liquid that burns with a sulphurous blue flame.

Distillation was the key, and it probably grew out of wort-cunning and perfumery, rather than out of the metals work. The metals workers picked up on it secondarily, and tried to apply it to sublimation.

. . . out of water came fire.

Effects In spite of the fact that alcohol is a depressant, in people who are very inhibited, whose inhibitions keep them from succeeding, alcohol can, and does, improve performance.

> *All the great villainies of history, from the murder of Abel onward, have been perpetrated by sober men, and chiefly by teetotallers. But all the charming and beautiful things, from the Song of Songs to bouillabaisse, and from the nine Beethoven symphonies to the Martini cocktail, have been given to humanity by men who, when the hour came, turned from tap water to something with colour to it, and more in it than mere oxygen and hydrogen.*
>
> *– H. L. Mencken (in Mortlock and Williams 1947)*

Mencken means carbon. *Vajra.* The adamantine.

History Alchemy and the knowledge of distillation migrated into Europe in the thirteenth century. Physician and alchemist Arnold de Vila Nova wrote a tract on the distillation of wine and is credited with coining the term *aqua vitae.* His pupil, Raymond Lully, was a leading proponent of the distilled spirit, believing it to be the elixir of eternal life and a preventative against senility. Many alchemists embraced the fiery liquid as the Great Stone itself.

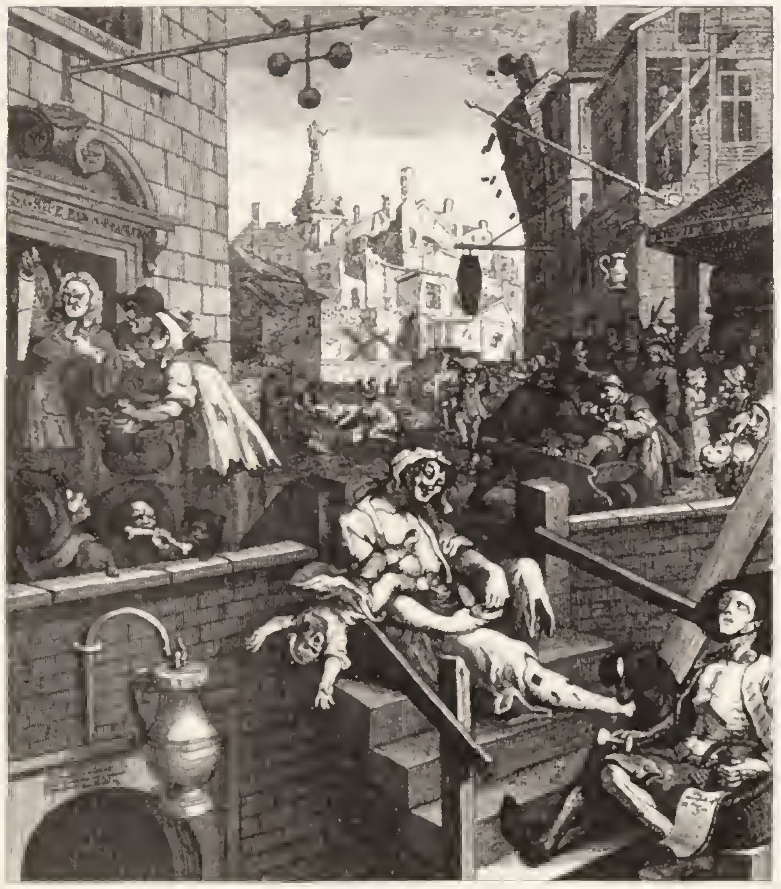
The use of aqua vitae remained limited to doctors, monks, and a few alchemists throughout most of the Middle Ages and the Renaissance, but they performed a great many experiments. The power of aqua vitae as a solvent was quickly recognized, and many medicinal liqueurs and elixirs were created, containing a few herbs to perhaps several dozen.

CLASSICAL INEBRIATION – GREEK YOUTHS IN HIGH CAROUSE, RED-FIGURE VASE PAINTING BY THE BRYGOS PAINTER, 5TH C. BC

The herbs were macerated in distilled spirits and then distilled again. Sometimes the distillate was then reinfused with a second batch of herbs. Fruits were also used. And so were minerals and precious stones: ground pearls, lapis lazuli, gold leaf. Sometimes animals were used: "mans-brains," "viper-wine."

By the mid sixteenth century, mostly as a result of the Protestant Reformation, distilled alcohol escaped from the poisoners and found its place as a poison of the general populace. Gin, "Geneva," the first popular liquor, was invented by a doctor. The popularity of alcohol as a recreational drug and its accompanying problems are depicted in the drawings of William Hogarth and other artists of the seventeenth and eighteenth centuries.

The Water of Life became so popular in the seventeenth century that another plant, *Saccharum officinale,* sugarcane, was grown in huge plantations on Barbados and other Caribbean islands, to feed the hungry yeast vats. To perform the back-breaking work of the cane fields, slaves were used. Much of the cane molasses was distilled in the American colonies. In fact, rum contributed to the economic success of the northern colonies much the way that tobacco did for the southern colonies. A diabolically lucrative trade developed: slaves from Africa to the West Indies, molasses from the West Indies to the colonies, rum from the colonies to England, and guns from England to Africa, to trade for slaves. The ships could just keep sailing in a large clockwise circle.



GIN LANE, WILLIAM HOGARTH, 1753

By the late eighteenth century, the alchemist's secret process was being used in the American backcountry. Transport to the east was difficult: the few roads charged tolls, and the Mississippi River was controlled by the Spanish. The Westerners responded by concentrating their corn or rye into whiskey, with a six-to-one compression ratio.

During George Washington's second term of office an armed rebellion broke out on the frontier because Alexander Hamilton had placed a tax on whiskey. Hamilton's friends were rum men, owners of large distilleries in New England. The rum industry was feeling threatened as the public outcry over slaving mounted, and the whiskey tax worked in its favor. Washington gave Hamilton 15,000 government troops to crush the rebellion and collect the tax. They succeeded, at least partially.

Folklore The term *proof* originated in the practice of testing alcohol by wetting gunpowder with it, and then applying a match to the powder. If the liquor were more than about 50 percent water, the powder would not go off. If the powder did go off, it was "proof" (or *poof!*) that the stuff was at least half alcohol (actually, 57 percent, but in the United States 100 proof is defined as 50 percent alcohol by volume).

Poesis The craft of compounding waters and cordials was summarized in 1757 by John French in a book called *The Complete Distiller.* Copies of the book can still be found in libraries. The only significant advancement of the two hundred years since French's book is the "continuous" still, the type used in commercial production of most primary distilled spirits: liquors produced by distilling wine or mash. Cognac and most of the finest herbal liqueurs are still cooked in batch stills, the old way.

The basic process of making liqueurs is the same as it has always been: macerate the herbs in high-proof alcohol (days to weeks), distill, finish with more herbs and/or with simple syrup. If you finish with a second maceration, such as is done with absinthe, you will probably want to filter the elixir afterward. (Millefiore Cucchi and some other herbal cordials contain a branch of the herb right in the bottle.) Add distilled water to drop the cordial to the desired proof.

The small-scale herbalist needs a still larger than the 1,000-milliliter glass flask of the laboratory and smaller than the copper pots of the moonshiners. Use imagination and ingenuity. A large pressure cooker can be perfect for a backyard operation. You want a pot with a jiggler spout in the lid, so that you can attach some vinyl or polyethylene tubing between the pot and your condenser. The tubing must fit snugly: a small hose clamp will secure it. A friend made a condenser with a large coffee can and coiled copper tubing. He drilled a hole in the can near the bottom for the tubing to poke through, sealed it, just let the water overflow over the top.

A STUDENTS' DRINKING BOUT, FROM THE DIRECTORIUM STATUUM, CA. 1489

Don't fill the pot more than half full. If you are going to distill a wort with solid matter still in it, make some precaution so that the hole can't get plugged. And remember, the elixir is flammable, especially when hot.

Be careful not to have the heat too high. A fast drip into the collector is OK, but no faster. Discard the head and the tail: the *faints.* The *head,* the very first distillate to come over, contains the highest fractions (the most volatile compounds in the tincture), usually aldehydes. It's easy to tell by taste. The head will often be coarser, more biting, than the heart of the distillate.

The *tail* is the very last of the distillate, the low-proof fumes that come over after the majority of the alcohol has already been distilled off and the temperature begins to rise in the distilling pot. Fusel oils are often in the faints (not always). The faints can be saved and eventually redistilled, to save as much of the alcohol as possible.

> *Be sure to check local regulations before you do this. A dear friend once had a small pressure cooker still of the type described above in his yard in his mountain home. Finding an abandoned motorcycle on the dirt road to his house, he dutifully called the police, suspecting that it was stolen. While the police were taking his report they noticed his still, which was in plain view. Too honorable to arrest him themselves, they reported the still when they returned to headquarters. Two squad cars were sent, my friend was handcuffed, arrested, and taken to jail.*
>
> *We brought photographs of the still to the trial to show the judge just what sort of a criminal he had in his courtroom, and the judge let him go with a fine.*
>
> > MORAL: When you call your local authorities to find out what the law is on backyard distillation, use a pay phone, and don't give them your real name.

On Drinking Cultures have collapsed from inebriation – precarious worlds poised between starvation and feasting; worlds filled with spirits and deities, and taboos; with complex and demanding rules of behavior. Intricacies of etiquette, who can be spoken to, which relatives, which emotions can be displayed, which must be hidden – all swept away in a torrent of inebriation hallucinatory in its strength and virulence.

> *The Hurons, in the seventeenth century, obtaining a cask of rum from the traders, held council to select a weapons-keeper – a sort of "designated driver" – who was absolutely forbidden to drink. This person's job was to collect all the weapons – hatchets, knives, tomahawks, and guns – and hide them. Even so, fatalities were not uncommon in the days-long rioting and debauchery that ensued before the rum ran out. Moreover, certain Indians, particularly the sensitive or those holding positions of social dignity, on awakening from the days of drunkenness, would commit suicide from shame. Drunkenness put them in a world like the dream world where one of the two souls lives, a mirror-world where phantoms and impulses moved and mixed, visible, flesh and memory and vision all swirling together.*

Plato had a similar idea. He thought that at symposia the host should stay sober. Compare this to a bar, where the bartender never drinks. Nor the bouncer. Which would have seemed correct to the Indians.

Gustav Schenk (1955) believes that our age drinks somewhat less than those before. That may be true for a comparison to past civilized cultures, but not for natural and inhabitory cultures. In most hunter-gatherer and primitive agricultural communities, drinking has a ceremonial character. It is joyously indulged in, occasionally. That such occasions may be frequent does not alter their status as special events, whether social or religious. In such a milieu drinking alone would simply never be considered.

An Andean people, the Aymaru, drink to excess, ceremonially, at any important social occasion – events that are not infrequent. The drunkenness is sacred, it represents the *love* of the hosts, and everyone present must get drunk. Quite drunk. The binge lasts for several days when it happens, complete with vomiting, passing out, lurching about, and falling over furniture. But no one becomes an alcoholic.

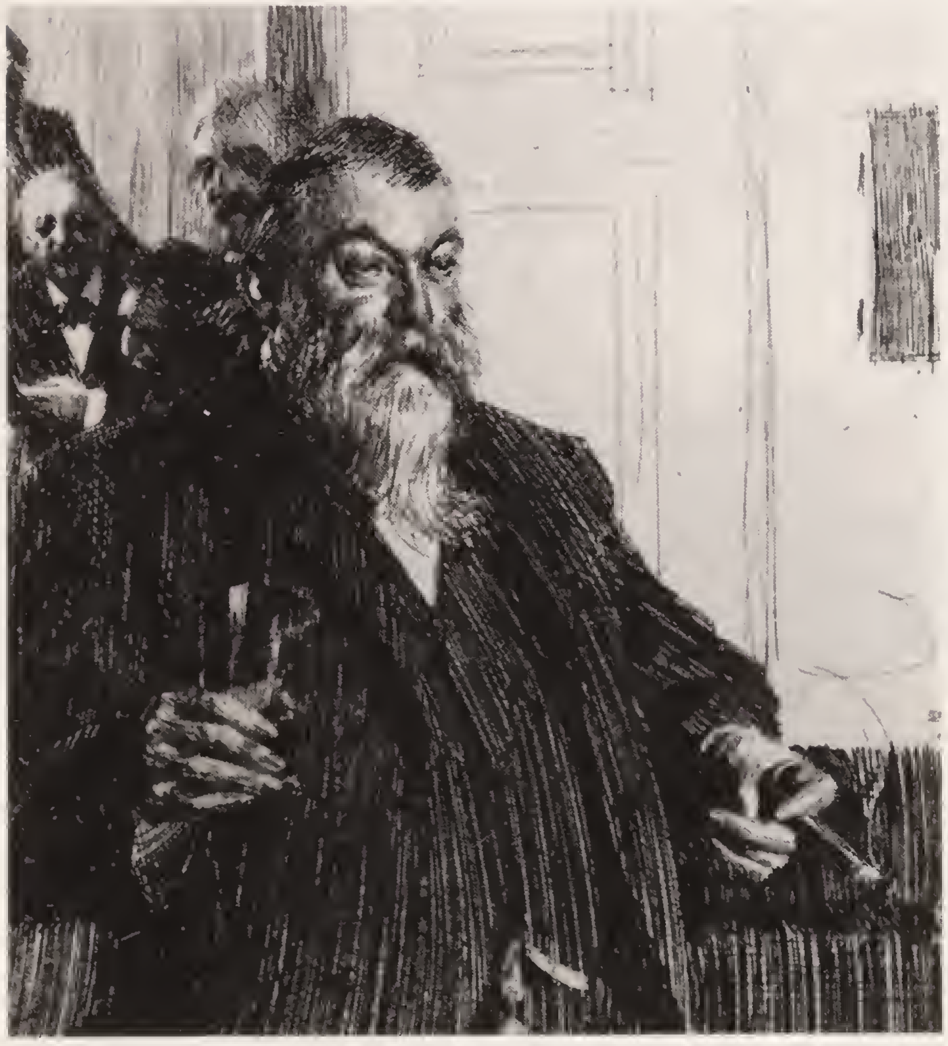
The Ally

cognac, armagnac, martell, martín, cambas, courvoisier, pisco, marc, hennessy, grappa, brandy, california brandy, masson, almadén, christian brothers, morrow, korbel, raynal, cognac, ahhh, cognac,

whiskey, hiram walker, johnnie walker, irish, scotch, cutty sark, macallon, glenlivet, glenfiddich, bushmill's, jameson, straight, blended, crown royal, v.o., kentucky, tennessee, sour mash, corn, bourbon, rye, jack daniels, jim beam, wild turkey, george dickel, ancient age, old grand-dad, old taylor, old crow, old crone, old hoss, old tennisshoes, cream of kentucky, early times,

canadian club, canadian mist, irish mist, irish cream, arrack, metaxa, tequila, cuervo, herradura, mescal, galliano, stonsdorfer, goldwasser, strega, valentino, certosa, mentuccia, bronte, cognac, ahhh, cognac,

gin, english gin, dutch gin, bols gin, sloe gin, fast gin, gin done done it, tanqueray, bombay, boodles, vodka, smirnoff, absolut, aquavit, schnapps, creme de menthe, tava, sabra, ouzo, rum, ron coco, rum-cola, the yankee-dollah,



THE TOAST, ANDERS ZORN, 1893

creme de cassis, creme de cacao, creme de vanille, creme de mocha, tia maria, kahlua, pasha, creme de almond, creme de noisette, sabazia, trappastine, carmeline, sapindor, aiguebelle, fior d'alpe, millefiore cucchi, sambuca, amaretto, kümmel, molinari, mistra, absinthe, anisette, pernod, izarra, tuaca, benedictine, b&b, cognac, ahhh, cognac,

aurum, campari, mersin, filfar, bertram's, marnique, san michele, rock and rye, prunelle, mirabelle, persico, framboise, parfait amour, curaçao, vaccari, médoc, drioli, slivovitz, maraschino, peter heering, james hawker, marasca, triple sec, du kuyper, yukon jack, applejack, calvados, forbidden fruit, bolsherwhisk, kirsch, dolfi, drambuie, southern comfort, sakura, cointreau, grand marnier, chartreuse,

cognac, ahhh, cognac . . .

THE ALCOHOLIC MUSE

"Why are you drinking?" demanded the little prince.

"So that I may forget," replied the tippler.

"Forget what?" inquired the little prince, who was already sorry for him.

"Forget that I am ashamed," the tippler confessed, hanging his head.

"Ashamed of what?" insisted the little prince, who wanted to help him.

"Ashamed of drinking!" The tippler brought his speech to an end, and shut himself up in an impregnable silence.

– Antoine de Saint-Exupery, The Little Prince

"Got any more?" Nick asked.

"There's plenty more but dad only likes me to drink what's open."

"Sure," said Nick.

"He says opening bottles is what makes drunkards," Bill explained.

"That's right," said Nick. He was impressed. He had never thought of that before. He had always thought it was solitary drinking that made drunkards.

– Ernest Hemingway, "The Three-Day Blow"

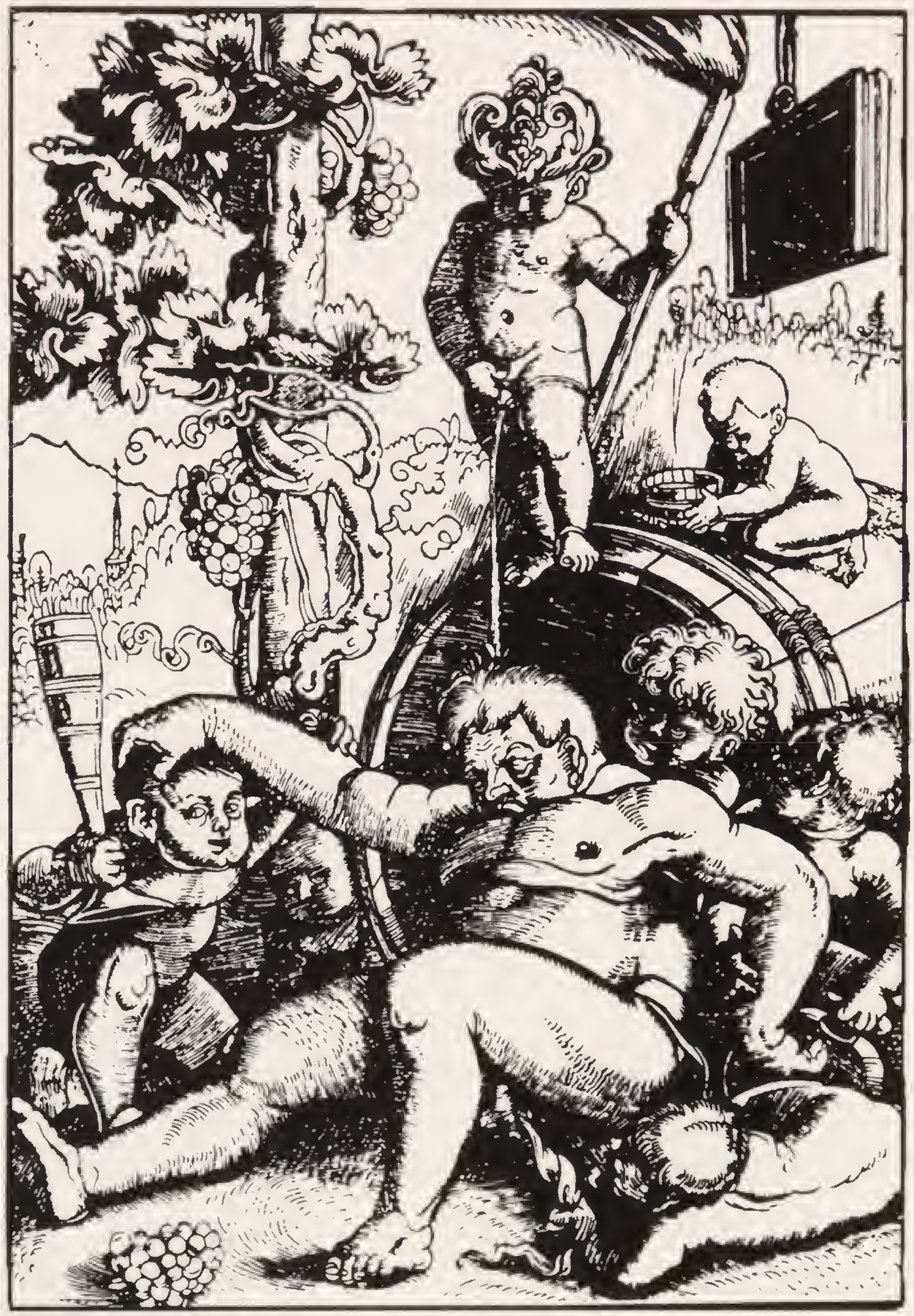
Some men are like musical glasses – to produce their finest tones you must keep them wet.

– Samuel Taylor Coleridge

Many addictions are so subtle that they go unnoticed. But big or small, addictions are almost always denied.

Opium was the drug of choice for the romantics, but for the moderns, the poets and writers of the first half or two-thirds of the twentieth century, the overwhelming preferred poison was alcohol. Donald W. Goodwin, in *Alcohol and the Writer,* writes: "Six Americans had won the Nobel Prize in literature and four were alcoholic. (A fifth drank heavily and the sixth was Pearl Buck, who probably didn't deserve the prize.)" Goodwin concludes that, as a vocation, writers are "over-represented" in the population of alcohol addicts. Sinclair Lewis, an alcoholic himself, once quipped: "Can you name five American writers since Poe who did not die of alcoholism?" Certainly enough of a problem that, for a writer, alcoholism could be considered an occupational hazard.

The loneliness of the work, the solitude,
or maybe just the unblinking white stare
of a blank sheet of paper . . .



CHILDISHNESS AND FOOLISHNESS, HANS BALDUNG GREEN, 1510

And writers have to structure their own time; there is no office, secretary, or co-workers. There is no time-clock to punch. All of the solar medicine must come from within – but also, and simultaneously, the lunar inspiration:

> *For art to exist, for any sort of aesthetic activity to exist, a certain physiological precondition is indispensable: intoxication.*
>
> – *Nietzsche, Twilight of the Gods*

The balance is the acme of our Art.

You have an appointment. You wait in the anteroom of the gods and worry about your makeup. The only mirror is the one you have brought with you, your offering, the mirror you have already painted over with your own visage.

Maybe the poison
is to silence the critic.

Or maybe, as Blake said, all true poets are of the Devil's party.

> *No poems can please for long or live that are written by water-drinkers.*
> *– Horace*

Here is Goodwin's list of American writers who were either alcoholics or "heavy drinkers," alphabetized:

> *James Agee, Conrad Aiken, Philip Barry, Robert Benchley, John Berryman, Ambrose Bierce, Truman Capote, Raymond Chandler, John Cheever, Hart Crane, Stephen Crane, e. e. cummings, Mr. Dooley (Finley Peter Dunne), Theodore Dreiser, William Faulkner, F. Scott Fitzgerald, Woolcott Gibbs, Dashiell Hammett, Ernest Hemingway, O. Henry (William Sydney Porter), William Inge, Randall Jarrell, James Jones, Jack Kerouac, Ring Lardner, Sinclair Lewis, Jack London, Robert Lowell, Ralph Maloney, J. P. Marquand, Edna St. Vincent Millay, John O'Hara, Eugene O'Neill, Dorothy Parker, Edgar Allan Poe, Edwin Arlington Robinson, Theodore Roethke, Robert Ruark, William Saroyan, Delmore Schwartz, Irwin Shaw, Jean Stafford, John Steinbeck, Wallace Stevens, James Thurber, Edmund Wilson, Tennessee Williams, Thomas Wolfe, and, according to its nonalcoholic drama critic Brendan Gill, almost every writer for the New Yorker during the thirties.*

To Goodwin's list, which he says was "off the top of his head," and only included writers who were "safely dead," we could easily add another score of poets, including, if rumors are to be believed:

> *Maxwell Bodenheim, Charles Bukowski, James Dickey, Richard Hugo, Bob Kaufman, Vachel Lindsay, Jack Michelin, Anne Sexton, Dylan Thomas, Chogyam Trungpa, Lew Welch, and James Wright.*

Deeper digging into the modern poets, 1920 to 1960, would double, triple, or quadruple this list.

And Li Po also died drunk.
He tried to embrace a moon
in the Yellow River.
– Ezra Pound

◆

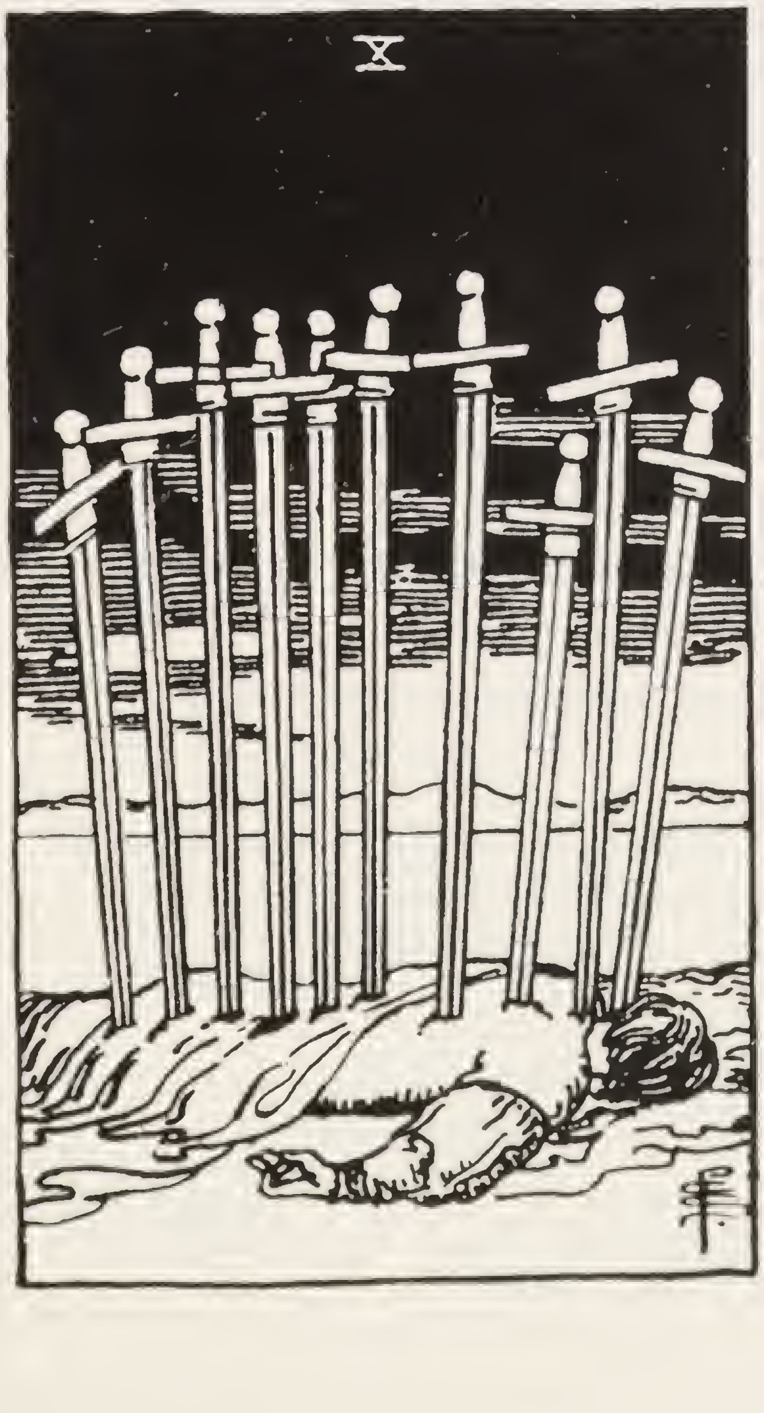
Timor Mortis conturbat me.

THE POISON PATH I

For instance, one man will have faith enough to eat all kinds of food, while a weaker man eats only vegetables. The man who eats must not hold in contempt the man who does not, and he who does not eat must not pass judgement on the one who does; for God has accepted him. . . .

Let us therefore cease judging one another, but rather make this simple judgement: that no obstacle or stumbling-block be placed in a brother's way. I am absolutely convinced, as a Christian, that nothing is impure in itself; only, if a man considers a particular thing impure, then to him it is impure. . . . What for you is a good thing must not become an occasion for slanderous talk; for the kingdom of God is not eating and drinking, but justice, peace, and joy, inspired by the Holy Spirit.

– *Rom 14: 2–3, 13–14, 16–17*

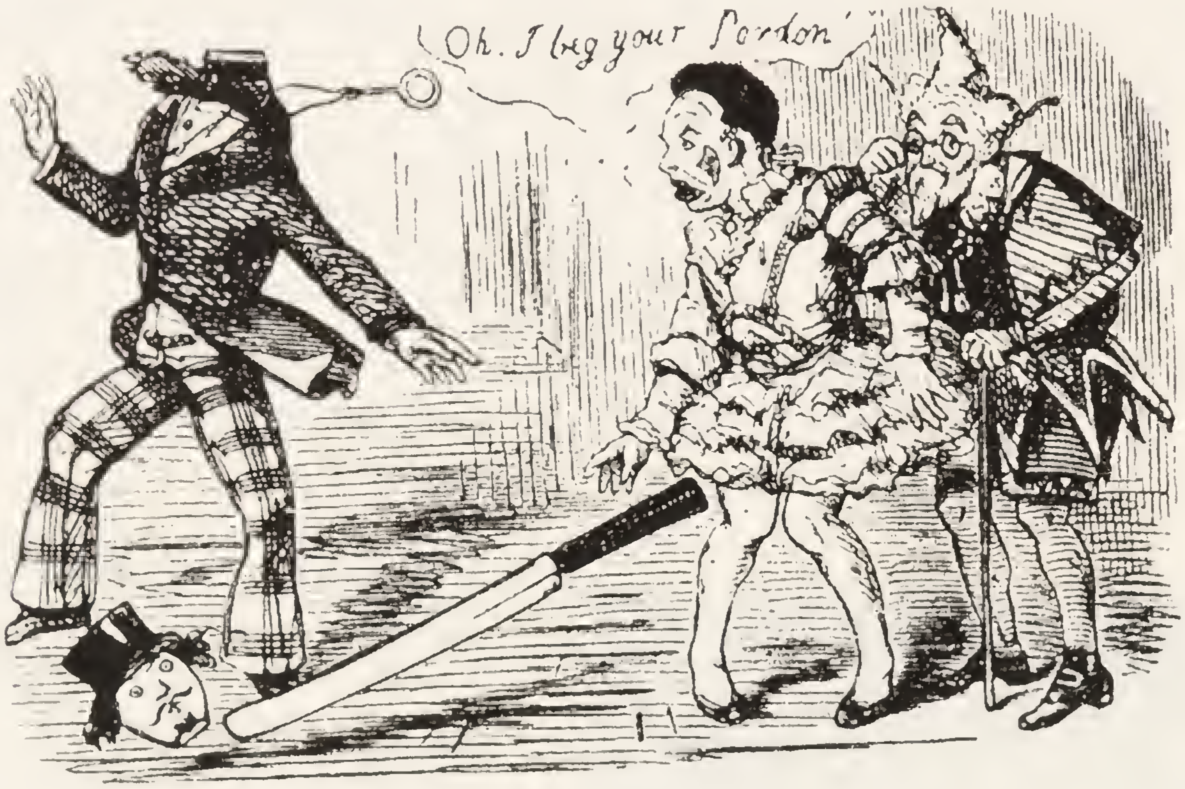


The matter of the *stumbling brother* is the cross of the Poison Path: on this trope turn the intersecting greater and lesser vehicles, the right-hand path and the left. Skilled poisoners avoid ruin, but in the struggle for "justice, peace, and joy" in the Kali Yuga, ruin may come on her own wings. And the Ten of Swords most readily approaches those who are unlucky.

How can you tell if you are lucky or unlucky? This is most important. If you are not lucky, you will surely stumble. Then the lucky ones must share the guilt. The question of the *stumbling brother* is relevant to the debate about legalization of crack cocaine and the possible "devastation of the Black community" that might result (as if the Black community were not already devastated by the current illegality of crack). Relevant, that's all. But we stray.

How can you tell if you are lucky? In his letter to the Romans, Paul is clear that he has two teachings, that there is an exoteric path and that there is an esoteric path. He states unambiguously that *he* knows that all substances are by nature pure, that Jesus told him so. The issue then is stumbling. Another's stumbling. Another who does not understand that all substances are pure. And since our way is the eclectic path of the magicians, we will step over the scores of stumbled bodies that accomplished poisoners such as Aleister Crowley leave in their wake, and toss off a couple of obstacles of our own.

You can tell if someone is lucky by their marks. Scars are particularly revealing. Even the lucky have close calls. But how did the wound heal over? *Is the person in question marked for calamity?* Or for ruin? The same way that some people bear the marks of survival, others are marked for ruin and failure – it is written on them. And I don't mean in any fatalistic sense, but writ by pattern.


'Oh. I beg your Pardon'

OOPS

Never share poisons with the *unlucky.*

And, as Nelson Algren said, don't sleep with them, either.

Best for all that they never hear a word about poisons. Or about power. Or about Paul. If they do, later, well, you know the rest . . .

> *The danger, of course, is that you who are reading this consider yourself, ipso facto, one of the lucky.*

ÆTHER

Related Substances Chloroform, $CHCl_3$; nitrous oxide, N_2O; ethylene, CH_2CH_2; ethyl chloride, C_2H_5Cl; halothane, $CF_3CHClBr$. Neither ethylene nor ethyl chloride is much used today as a general anesthetic, although ethyl chloride is still used as a local anesthetic. Chloroform is more toxic than ether, having a therapeutic index (margin of safety) of about three, an overdose causing cardiac arrest. Halothane also has a relatively low margin of safety, but has largely replaced ether as a general anesthetic because it is nonflammable. Ethylene is more than flammable: mixed with oxygen, as it must be for use as an anesthetic, it is explosive.

> *a plant hormone, ripener of fruit and deadener of mind:*
> *a neurotransmitter straddling two kingdoms . . .*

Chemistry Ethyl ether, or diethyl ether, $(C_2H_5)_2O$. Two short alkyl chains, an oxygen between them, forming a symmetrical molecule of very low polarity. At room temperature, ether is a highly volatile liquid; as a gas it is heavier than air and highly flammable. Ethyl ether is an important organic solvent, but in most cases methylene dichloride is a safer and adequate substitute. Ether is notorious for forming explosive peroxides if left around the lab for too long.

Ether is prepared by using concentrated sulfuric acid to dehydrate alcohol at an atomic level. The acid's thirst for water is so great that it can strip hydrogen and oxygen atoms right off the ethanol molecules. The resulting liquid is lighter and subtler than its parent: an alchemical poison, the refinement of the refinement of the poisons in the plant.

> *An angel is boiled in satanic acid. But the vapor that arises must be the atmosphere of heaven, not of hell. In hell, with all the sparks and flames,*
> *ether would explode instantly.*

Ether is to alcohol as alcohol is to water: if alcohol is water and fire, ether is water, fire, and air.

How Taken The vapor is inhaled. Ether may also be imbibed. Like from a shot glass. If recipes for mixed drinks exist, I haven't seen them. Besides, water and ether are immiscible, so if you are going to drink it, I think you have to drink it neat.

A teaspoonful is adequate for beginners, especially along with some inhalation. In the last century people would swallow six or eight drops on a cube of sugar and wash it down with a little water. Eternal recurrence.

Effects

> *There is no truth so profound*
> *it cannot be obtained with the inebriants . . .*

Pharmacology A general anesthetic, producing unconsciousness. Four stages are customarily recognized, but only the second is of much interest to us. The stages are:

1. local irritation: bad taste, choking, sometimes ringing or hissing sounds;

2. excitement: giggling, or shouting – the religious sing hymns, the abusive fight – some of us need to write;

3. unconsciousness: pulse rapid and strong, breathing deep and regular, muscles relaxed;

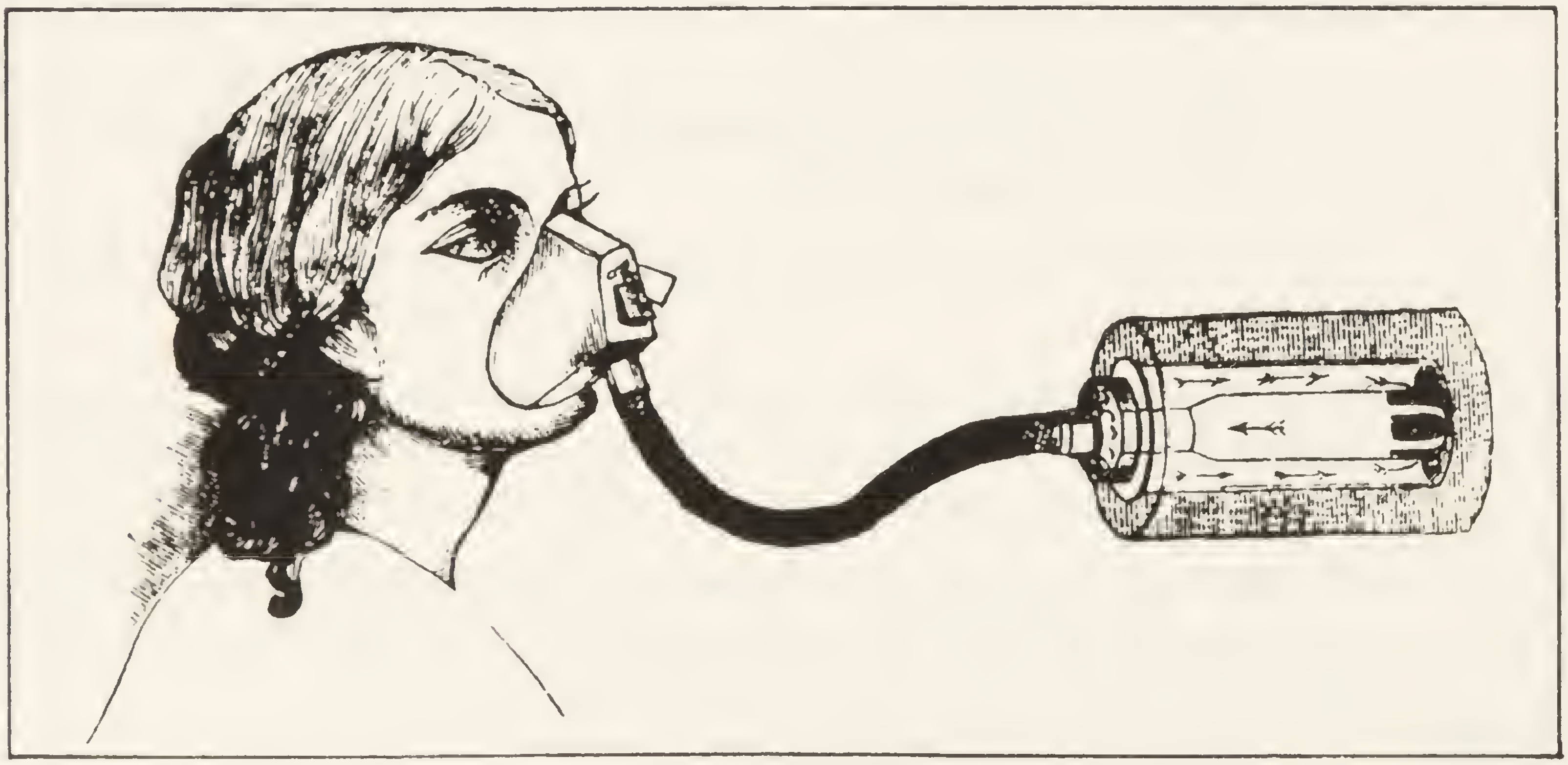
4. coma: all vital centers repressed, blue face, shallow or gasping breathing, dilated pupils that don't react to light.

Ether coma should be treated by immediately removing the mask and giving artificial respiration. Stretching the sphincter of the rectum can help induce breathing. Give respiratory stimulants such as caffeine or atropine.

Ether has a lower safety margin than alcohol does: about three to one for ether, and five to one for alcohol. Comparisons of the chronic toxicity of ether with the chronic toxicity of alcohol are mixed. Some people maintain that alcohol is more dangerous, others state that the "degeneration of character" proceeds more quickly with ether than with alcohol. As ether is not metabolized, liver damage is unlikely. More likely problems are gastritis, irritation of the kidneys, albumin in the blood, anemia, or pneumonia as a result of mucus in the lungs.

Ether interacts synergistically with tetrahydrocannabinol.

Effects The trick is you can't pay attention to the smell or the taste, or be concerned that you'll go around smelling like ether for a day or two.



ETHER INHALING DEVICE

like a glockenspiel –
colored bells, cold stars, a woozy ringing,
great spaces opening between: *the Abyss*

How Taken

The best description is in John Irving's rather satisfying novel, *The Cider House Rules,* about an orphanage doctor and abortionist who is an ether addict:

> *Dr. Larch was an open-drop-method man. With one hand he held a cone over his mouth and nose; he made this mask himself (by wrapping many layers of gauze around a cone of stiff paper); with his other hand, he wet the cone. He used a quarter-pound ether can punctured with a safety pin; the drops that fell from the elbow of the safety pin fell in exactly the correct size and at exactly the correct rate. . . . When the hand that held the ether can felt unsteady, he put it down; when the hand that held the cone over his mouth and nose dropped to his side; the cone fell off his face.*

The good doctor visits the starry realm of ether nightly. Consequently, he always smells of ether, but the smell of ether was not so unexpected on a doctor in that era. For nondoctors, the lingering excretion of ether through the lungs is a dead giveaway, and is detectable for twenty-four or even thirty-six hours after a session.

Irving calls ether "the perfect addiction for a conservative," and there are many references to the "light, tasty liquid" throughout the book.

Effects

One might think that the last vestige of consciousness would be interested in monitoring the proximity of danger, in one's own margin of safety. But no. The last thread of consciousness is used to deliver a few more drops of the ether; all else is disregarded. Perhaps, you might say, the subject already is secure and in any real emergency invisible, submerged parts of the mind would come forth to signal and take charge. Perhaps. Perhaps, but in my experience, the faintest, least glimmer of volition is immediately directed to the ether bottle.

> *Let us not, out of hand, reject those arguments based on purely quantitative considerations, that in x-1 occurrences the conclusion is based on extraordinary circumstances. That is, that there is a basic difference between leisurely decisions and those based on duress or boundary conditions.*

Decisions based on boundary conditions do occur, and they are invariably to apply more solvent.

The Ally

I'm not interested in just the,
you know, the run of the mill,
the run of the mill kind of
profound thought.

Ahhh, drunk! And in public.

There must be some insistent repetition.

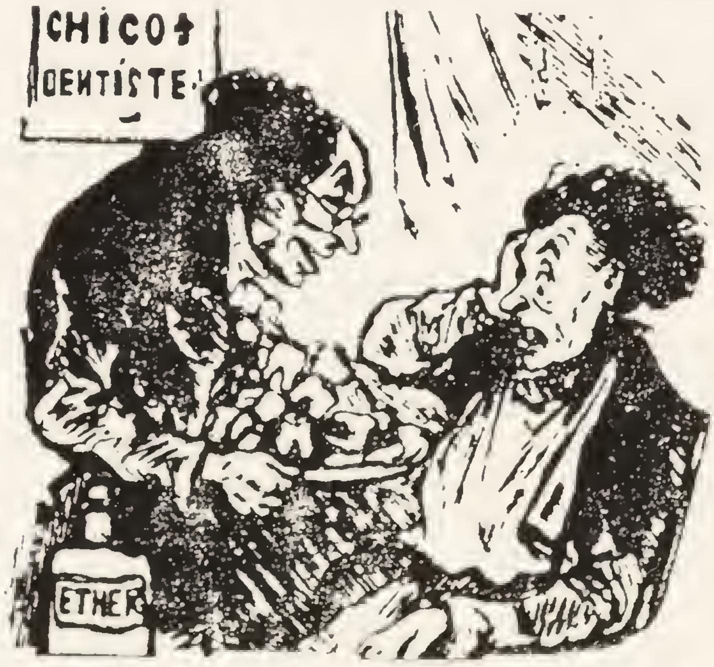
> *Repeating, even just repeating as fast as you can repeat, there is always at least some value in virtuosity, in perfection of craft.*

History The preparation and chemical properties of ether were described by Basil Valentine and Valerius Cordus in the early fifteenth century. Paracelsus may have been the first to use ether on himself. Ether was first used as an anesthetic around 1840 at Massachusetts General Hospital. Humphrey Davy knew ether and used it as a psychoeuleptic, as did Samuel Taylor Coleridge, though both of them focused more attention on nitrous oxide.

The Ally You can figure out from the basics that it is not an evil conspiracy, that it has more to do with the nature of things, the difficulty, the subtlety of self-knowledge, and that Evil is overrated.

> *There is one class to whom reflection is a fault; is not only a fault, is a sin; is not only a sin, is an atrocity – who cannot bear to exist without their own existence dis-existencing somebody else's existence.*

That's the problem: there are those who think that their own existence needs so much room they must grab all possible planes of existence before they have even begun to develop the plane that they themselves exist upon. That's the problem.



AFTER ETHER

History Ether became popular as a party drug in the late nineteenth century. Many used it as a substitute for alcohol. Oliver Wendell Holmes experimented with it at Harvard, where there was much talk about ether's power to produce mystical and mind-expanding experiences.

> *déjà vu, anyone?*

In northern and eastern Europe some people were consuming up to a liter a day. There are stories of entire villages drinking and sniffing ether, of the streets smelling like hospital rooms. One big advantage of ether over alcohol is the rapidity of the inebriation, which is nearly immediate, and the similarly rapid return of sobriety. Serious topers could get inebriated three or four times in a day and do business or errands in between, reportedly with minimal hangovers.

In the United States, not surprisingly, ether's popularity peaked during Prohibition. Ether was allegedly used to spike drinks, perhaps mixed with alcohol, or just drunk by itself.

The Ally *What is the collateral damage of the pharmacist's pipette?*

Occasionally I have an insight that would lead me to despair of any nobility of human nature.

> *The difference between the ba-bá and the nothing is significant: there are political implications.*

And that the difference between being and nothingness has political implications is astounding.

> *There are those who would repress the question of the difference between the ba-bá and the ba-bá ba-ba-bá as having any significance.*
>
> *ba-bá ba-ba-bá or ba-bá-ba ba-bá*

History Allen Ginsberg used a whole quart of ether pursuing his poem of the same name: a long, rolling poem, "Aether: 4 Sniffs & I'm High," begun at eleven-fifteen in the evening, Hotel Commercio, Lima, Peru, May 28, 1960.

> *All night, w/ Ether, wave*
> *after wave of magic*
> *understanding.*

The poem not ended until the next day, questioning the One, questioning Death, questioning Keats's Nightingale:

> *What can be possible*
> *in a minor universe*
> *in which you can see*
> *God by sniffing the*
> *gas in a cotton?*
>
> *– Allen Ginsberg, Reality Sandwiches*

Laughter, Light, Pistol Shots, a Magic Universe slightly mad.

The Ally It is the Fool who knocks at the door of Death:

> *"Hey, asshole, open up!"*

And not surprisingly the door of Death opens: and Death steps out in a foul mood and wants to know who it is among the mortals who is so impatient to knock thus. And the Fool, the Fool, even with a cold sweat breaking all over his body, gestures, with that shit-eating grin, over his shoulder, and blames the guy behind him.

and if you think about it, who really cares:
I mean who cares that some creep
hiding around in the bushes behind a fool
gets creamed
on a case of misidentification?

But we do care. They deserve to live because they are like us – walking is not so different from creeping – they just don't understand. The way we do. Be tolerant, because tolerance is self-tolerance. Why root out one part of yourself as bad and self-destructive and cherish some other part as worthy and good?

In order for there to be something that something happens on
there has to be something like this fabric of the drum
there has to be a tympanum
there has to be an echoing
has to be a sounding board
be something that occurs
out of the mother womb
of nothingness . . .

So some heroes move to the other side, so that they can create, so that something happens here, so there's some kind of music, so that light scratches the sky.

Someone must say OK, I'll move, I'll go, let's see, I'll dance, let's see what happens, let's see where this electricity goes, let's see what happens when we strike this match.

phosphorous, streaking black night –
Lucifer, fire and light.

The here and the beyond are enough, but there were a few angels for whom it was not enough: who demanded a third dimension – who sought fusions, communes, who ate each other and created sex.

They said even though the here and the beyond encompass everything and
stretch everywhere, we wish to go further than the beyond, even if, even if
that will mean that some here must die.

There would be enough in the here and the beyond if everybody stayed in the here and the beyond – but because we have ventured further, there is not enough: some must perish, and thus Death entered the world.

"Yet the experiments must continue!"

We must welcome Him with symposia. It is no other than the Other.

and you of all men know the importance of the Other
you of all men and women know the importance of the Other

FOSSIL FUEL

The poison spreads over the planet.

Related Substances Hexane, Freon, airplane glue, toluene, gasoline. Spray paint, hair spray, PC cleaner, dry cleaning fluid. Spot remover, nail polish remover, paint remover. Lighter fluid, correction fluid thinner, etc., etc., etc.

How Taken "Huffed." That means inhaled.

Effects Similar to ether and nitrous oxide, either of which are many times safer than any of these poisons. Habitual huffers can distinguish different brands of sprays and fluids, and develop preferences. Huffers probably have an interesting terminology to describe the subtle differences of effects, and it would be worth recording, if you could find an informant who is still articulate.

The Plant Here we are at great distance from the alchemical chloroplast: separated in time by eons. Geology and industry have combined to crack, twist, and distill the mummified juices of ancient forests into spiritous and ethereal fluids.

The ecologist Howard Odum once quipped that the evolutionary purpose of human beings was to release all the carbon locked up under the ground back into the biosphere. If true, our mission will soon be accomplished. That it be a suicide mission in no way detracts from its grandeur or heroism.

Chemistry

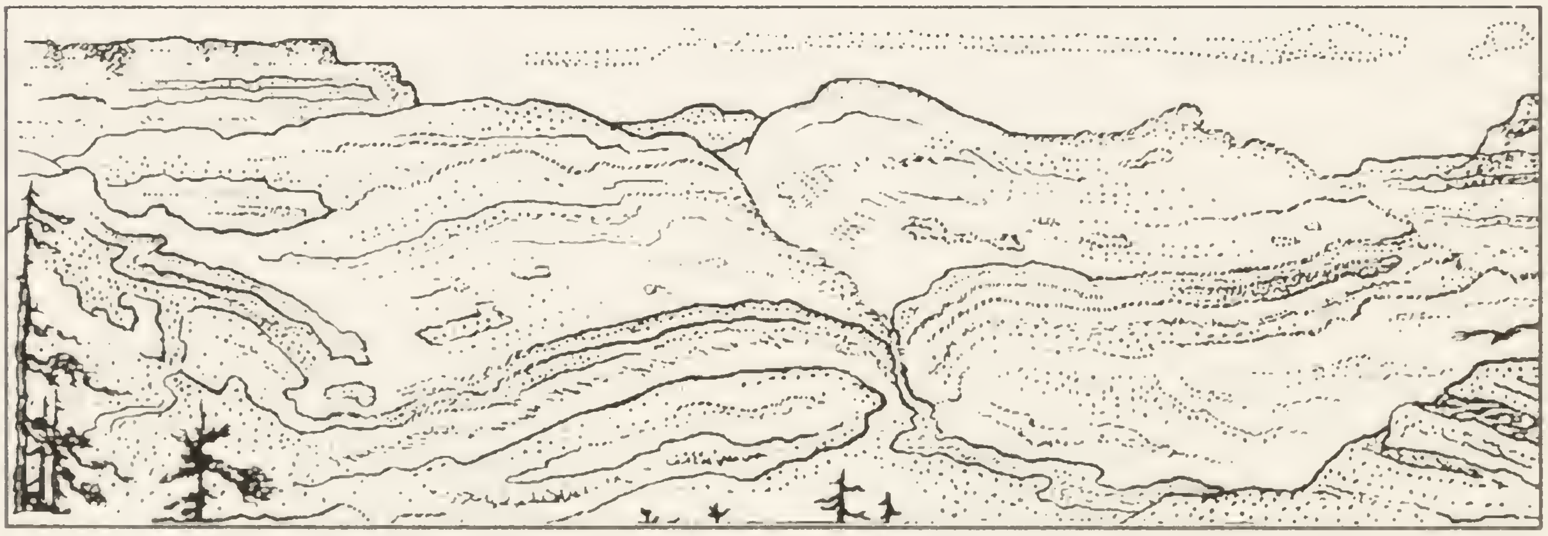
PRODUCT	CHEMICALS
Adhesives	
Airplane glue	toluene, ethyl acetate
Miscellaneous glues	hexane, toluene, methyl chloride, acetone, methyl ethyl ketone, methyl butyl ketone
Aerosols	
Spray paint	butane, propane, fluorocarbons, toluene, hydrocarbons
Hair spray	butane, propane, chlorofluorocarbons (CFCs)
Air freshener	butane, propane, CFCs
PC cleaner	CFCs
Cleaning Agents	
Dry cleaner	tetrachloroethylene, trichloroethane
Spot remover	xylene, petroleum distillates, chlorohydrocarbons

Solvents	
Nail polish remover	acetone, ethyl acetate
Paint remover	toluene, methylene chloride, methanol, acetone
Paint thinner	petroleum distillates, esters, acetone
Correction fluid	tricholorethylene, trichloroethane
Industrial solvent	toluene, xylene, methyl ethyl ketone, methyl butyl ketone
Fuels	
Lighter fluid	butane, isopropane
Gasoline	hexanes, aliphatic hydrocarbons, tetraethyl lead

Toxicology Hexanes can cause peripheral nerve damage. Toluene can affect the central nervous system. Butane and cfcs do not seem to cause neurological damage, but butane can trigger cardiac arrest. Chlorohydrocarbons are toxic to the liver. Gasoline contains hexanes, benzene, other hydrocarbons, triorthocresyl phosphate, and sometimes lead, all of which are toxic. Benzene is carcinogenic.

Epidemiology Glue sniffing is usually tried once, a few times, or for a few weeks or months. Most young people quit after that. All but a few.

The Ally A treacherous ally. She turns on you quite suddenly. She gets more and more demanding and gives less and less in return. Like all plant allies, she wants your consciousness, but unlike the others her home is in the Paleozoic: only her spiritous ghost wafts through our own eon. Nerve cells doze, sleepwalk with the ally back to a gooey subterranean syncline.



Poesis If you are incarcerated, you may not have many choices. Otherwise, you do, and you should avail yourself of less harmful substances.

That said, if you are a huffer anyway, take the time to read about solvent abuse in your local library. Reading between the lines, you can discover that some are more harmful than others, some are safer than others. In general, pure solvents are less toxic than mixtures, and a can of pure toluene from the hardware store is safer than the mixtures found in airplane glue or aerosols and spray cans.

Methyl ethyl ketone, MEK, has a relatively clean rap sheet, while MBK, methyl butyl ketone, has the same toxicity as hexane, and mixtures of MEK and MBK are worse than either alone.

If habituated, get off and get help.

Ethnography

Gasoline sniffing was once most common among Latinos and on Indian reservations, but with the decreased availability of other intoxicants it is now becoming much more widespread in other cultural and economic strata.

> *Give them ether. Give them halothane.*

Glue sniffing as an "epidemic" was created by scare stories in newspapers and later in schools, beginning in 1959. Before that time glue sniffing, like other solvent huffing, was a relatively rare and inconsequential activity. However alarming the newspaper stories of the new threat, with their spectre of permanent brain damage, were to parents, the result was a tremendous increase in the practice. Before the scare stories, few had even heard of glue sniffing. *Consumer Reports* editors were unable to find any reference to glue sniffing before a scare story appeared in the Denver *Post* in 1959. That the hazards of glue sniffing were wildly exaggerated, that their teachers and their police lied to them, was not lost on the baby-boomer generation.

> *I'd heard from my mother that he was sniffing glue. She was very afraid. So was I. I'd always heard it melted your brain. One night I came in he was on the couch with a plastic bag with three tubes of glue in it. He showed me how to do it. It was wild. I really got a buzz. Very mental. It didn't last very long. Then we had to do it again.*

Toxicology

N-HEXANE
METHYL BUTYL KETONE (MBK)

The neurotoxin is the metabolite: 2,5-hexanedione (HD). Hexane seems as if it should be pretty innocuous stuff – it's just a straight hydrocarbon chain – but like MBK it metabolizes into 2,5-HD in the body, which causes peripheral neuropathy. The neuropathy begins to develop several months after continued exposure, begins painlessly, and may continue to develop for several months after cessation of exposure.

MBK was little used until the 1970s, when it began to be added to paint thinners and other solvents. After MBK was added to methyl ethyl ketone (MEK), reports of polyneuropathy began appearing. MEK alone does not produce neuropathy.

TOLUENE

Chronic inhalation of toluene may produce cognitive dysfunction, hearing loss, equilibrium disorder, and damage to the optic nerve. There is no convincing evidence that pure toluene produces peripheral neuropathy. Nor is it clear that the damage from toluene is irreversible with sustained abstinence. Most sniffers, however, get their toluene from products containing mixtures of solvents, some of which may be highly toxic both by themselves and by synergistic effects on metabolism.

TRICHLOROETHYLENE (TCE)
1,1,1-TRICHLOROETHANE
BUTANE
CFCS: TRICHLOROFLUOROMETHANE (FREON 11)
DICHLORODIFLUOROMETHANE (FREON 12)
1,2-DICHLORO-1,1,2,2-TETRAFLUOROETHANE (FREON 114)

All of these substances appear to sensitize the heart to epinephrine, which may then cause arrhythmia.

TCE was once used as an anesthetic agent along with nitrous oxide. Its toxicity seems to be low. Heavy exposure leads to neuropathy, which is reversible. The biggest danger is cardiac arrhythmia.

Relatively less toxic than other solvents, 1,1,1-trichloroethane is most commonly inhaled in typewriter correction fluid, where it occurs in combination with TCE. Several deaths are attributed to sniffing correction fluid, all from cardiac arrhythmia.

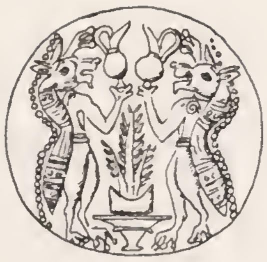
Butane, common in cigarette lighters and tanks of cooking fuel, is also relatively low in toxicity, but like the above chemicals can cause sudden cardiac failure. Several cases are documented in the United Kingdom. The true degree of risk in inhaling butane is unknown, because there is no accurate knowledge of the extensiveness of the practice. Nor is it certain that other factors may not have been involved in the fatalities, such as interaction with other drugs, or even the freezing temperature of the expanding gas. (Merely drinking ice water can, and does, trigger heart fibrillation because of the proximity of the esophagus to the heart.)

The CFCs Freon 11, Freon 12, and Freon 114 may cause minor toxicity to bodily organs other than the heart, but all such damage seems reversible. A handful of deaths are recorded due to cardiac failure from inhaling CFCs. Freon 11 appears to be more toxic than Freon 12 or Freon 114. Newer replacement aerosols appear to be safer, both environmentally and biologically, with significantly less cardiac sensitization.

MEAD AND THE DIVINE MADNESS

The greatest blessings come to us through madness, when it is sent as a gift of the gods.

– *Socrates, Phaedrus*



MYCENAEAN GEM WITH JUG-BEARING BEE GENII

Mead is a gift of the bee goddess. Two lionlike figures wearing bee-robes, carved into a Mycenaean gem: bee priestesses, something being poured out of vases over a young growing plant. Nectar. Bees like messengers, angels – banqueters bearing *amrita,* the Elixir.

The sexual nature of apian food-gathering would not have been lost on the archaic plant people, either. Their lives were dependent on the vegetal world and its fecundity. They would inspect the seed-heads, the fruits, find some fertile and growing, others barren. They'd figure it out. And follow the bees.

Flowers, genitals open to the world,
the wind, critters flying or crawling,
the whole forest a vagina –
bees like semen, promiscuous and orgiastic,
butterflies feeding – proboscis curling
and uncurling, lips, petals, golden
pollen and amber, compound eyes.

Honey is between, is both food and intoxicant. As an offering, honey was νηφαλια, *nephalia,* of the sober offerings, offered without wine. Honey, water, and milk were offered to the Muses and the nymphs, sometimes with twigs of Cretan thyme, *Thymbra capitata.* Honey was recognized as a source of good health: Pythagoras credited his longevity to daily consumption of honey. Honey is antiseptic, a preservative. The Egyptians used it for embalming, and the Greeks probably knew about that. The priestesses of Demeter were called *melissae:*

bees swarming, golden bees clumped
around a branch, and a queen,
    the Goddess bee, Melitodes.
Artemis, also called Melissa, the bee.

◆

"Bees are begotten of bulls."

– *Porphyry*

And honey is also inebriating. Mixed with water it ferments like wine, and certainly preceded wine. Mead is a perfect inebriant for hunter-gatherers: you find it, you put it into some kind of vessel along with some water and send out the invitations. By the time everyone arrives, the mead is ready to drink.

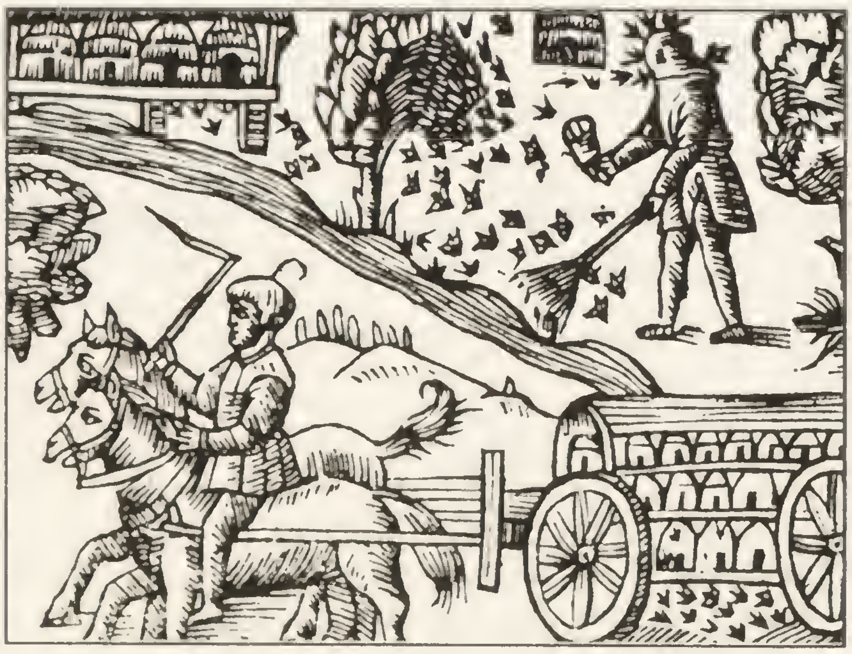
When the Dog Star rises,
from the sacrifice, life: autogenesis.
The divine child is nurtured by bees
in a cave that overflows, ekzein, fermented:
mead the ichor, the amniotic fluid of the gods.

◆

"A hum arises: hark! they buzz and buzz."
– Virgil

Linguistically *mead* is from a very ancient strata of words. Indo-European roots *medhu,* "honey," and **medhus,* "sweet," are thought to be akin to Mediterranean, Semitic, and Egyptian words. Hebrew *māthōq* or *metheq* and Aramaic *matqā,* all mean "sweetness." Akkadian *matqū,* "sweet," like Ugaritic *mṭq,* is probably cognate with Greek *meli,* "honey," like the Latin *mel,* German *met,* Hungarian *mez,* Finnish *mesi,* mean "honey beer." Greek *methu* is an "intoxicating drink"; *methyein,* "to be drunk," *methyskein,* "to make drunk"; thus amethysts are a charm against drunkenness.

Mead, meodu, meddo, madhu.
Traveling eastward, through Sanskrit, and vaguely backward in time
Sweet and pleasurable,
the nectar of flowers,
mead, or sweet wine, or soma.



DOMESTICATING BEES

Hydromel, the cuckoo bird,
to revel and rejoice, a girl
with bewitching eyes, the madness
of love. Madness. Drunkenness.
Wanton passion. A libertine,
a world of pleasure, the erection
of bodily hair caused by love.

A lump of honey, a large black bee,
bees in swarm, drunken carousal.
To be crazy, to be mad,
exhilaration and delight, passion.

Love, the God of Love,
to inflame, be enamored. Lust.
Musk. The excrescence from the temples
of an elephant in rut.

To madden, to gladden, to love and desire.
A stream of honey. Grapes or dates.
Ardor. Rapture. Pride,
arrogance, conceit.

Sexual love, sexual union, spring, datura,
a fingernail, a kind of embrace;
Shiva, the penis, pudendum, semen,
a valley of pleasure, Asoka, the tree
of delight.

The Plant

In mead the plant has already been digested once by the bee, and then digested again by the yeast, but traces remain. Alkaloids remain, and certain terpenes and oils. Light flavors of citrus and clover, dark poisons of buttercups.

Xenophon reported how the whole Persian army got intoxicated and sick by eating honey of bees that had been feeding on *Azalea pontica*. Honey from bees feeding on nightshade is hallucinogenic. In some cases the bees seem to concentrate the toxins.

Germanic and Celtic tribes continued to drink mead long after the Greeks and Romans changed to wine. Mead was often spiked with spices and other plants, often the same psychotropic plants that bees would feed upon naturally: henbane (*Hyoscyamous niger*), poppy (*Papaver somniferum*), or wild rosemary (*Ledum palustre*).

In Mesoamerica, the Mayans, Polomchi, and Lacandon brew a mead called *balché*. Bark of the *balché* tree, *Lonchocarpus violaceus,* is mixed in with honey and water, along with other admixtures such as datura, tobacco, or *Nymphaea,* the water lily. Sometimes spices are added, vanilla or frangipani, or cocoa, or even the cane toad, *Bufo marianus,* or the skin of tree frogs. The preparer, who identifies himself with Bol, the god of inebriation, chants and summons the invisible spirits of the poisonous plants and animals to add the essence of their poisons to the brew. Drinking *balché* is social and ceremonial, the drinking beginning just before dawn.

Hydromel (υδρομελι), honey and water, the basic mead, survived into the Renaissance as *idromellum*. Another popular medieval beverage was metheglin, spiced mead: "the healing liquor." Welsh *meddyg,* medicinal, plus *illyn,* liquor.

**mēd: medicine, mete, modern,*
        meditate,
                empty.

Thomas Hardy, in *Wessex Tales,* gives a recipe for an old spiced mead:

4 lbs. maiden honey to a gallon of water;
white of eggs;
cinnamon, ginger, cloves, mace, rosemary;
yeast.

History Hydromel, mead, flows from a well at the base of the world tree, Yggdrasil; the well of the giant, Mimir. Odin once wounded and hung himself on the great ash tree for nine days and was revived by a drink of hydromel given him by Mimir. When Odin was seeking Othorial's mead cauldron, he changed himself into a serpent and made love to Gunnloth. He drank the mead in three great draughts, but some drops fell to earth. This is how men obtained poetry. But our poetry is not like that of the gods.

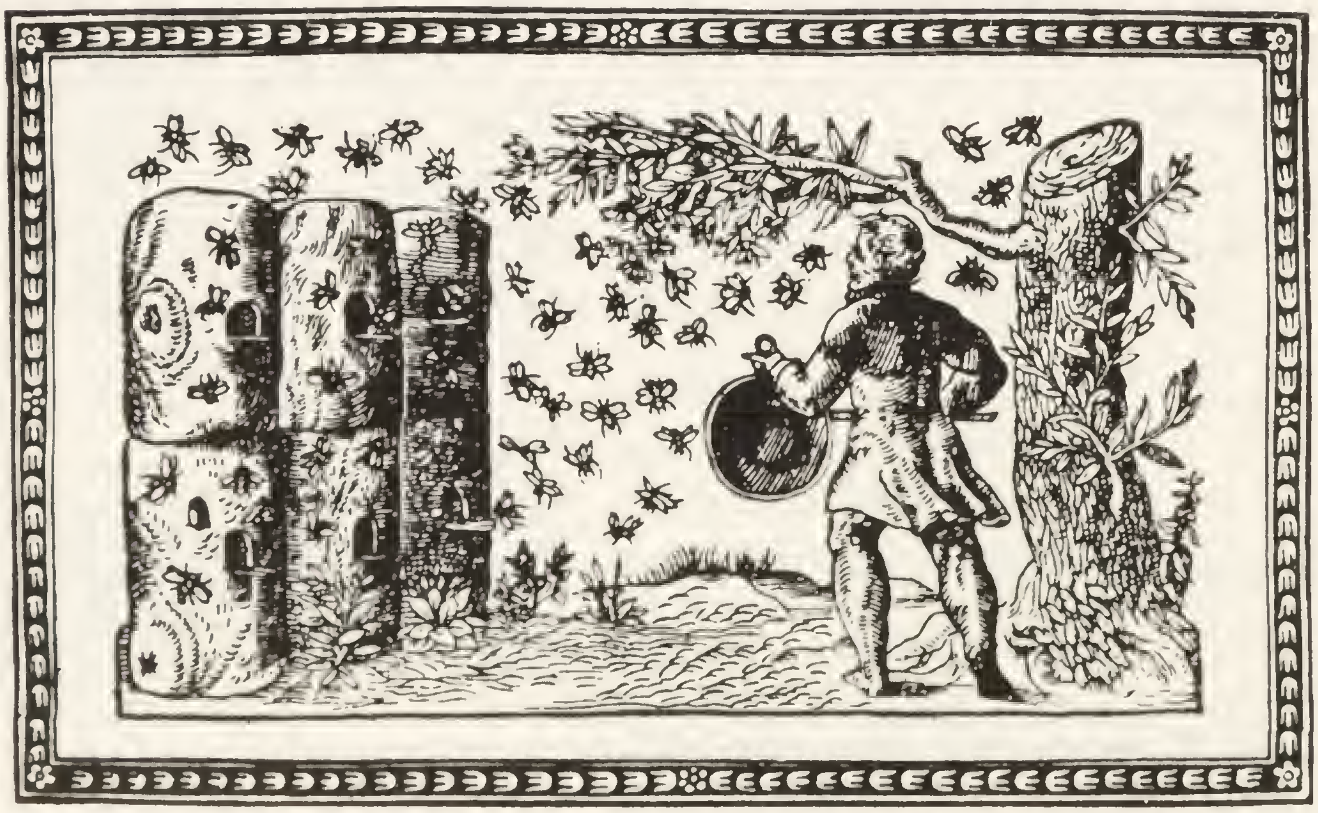
> *[The poet speaks] not with intellect alone but with the intellect inebriated by nectar. As the traveller who has lost his way throws the reins on his horse's neck and trusts to the instinct of the animal to find his road, so must we do with the divine animal who carries us through this world. For if in any manner we can stimulate this instinct, new passages are opened for us into nature. . . . This is the reason why bards love wine, mead, narcotics, coffee, tea, opium, the fumes of sandalwood and tobacco, or whatever other procurers of animal exhilaration.*
>
> *– Ralph Waldo Emerson, The Poet*

Divine drunkenness, like ether, like alcohol used to cause. Adolescent drinking, filled with profound thoughts and poignant reflections.

> *We will sit here and drink beer until we figure out the answers –*

Is there a God? How did the universe begin? What was there before the universe was created? Can there be a fundamental particle? Does life have a purpose?

> *Man, being reasonable, must get drunk;*
> *The best of life is but intoxication.*
>
> *– Lord Byron, "Don Juan"*



FROM MATTIOLI'S COMMENTAIRES, 1579

Socrates made four divisions of divine madness, giving each kind to one of the gods. Prophecy (*mantike*), which he distinguishes from mere augury, is given to Apollo. Mystic madness (*telestike*) he gives to Dionysus; poetic madness (*poietke*) to the Muses. The highest madness is erotic madness (*erotike mania*), inspired by Aphrodite and Eros.

We are souls who have lost their wings. As plant poisons fly on the wings of bees, so we, drinking poisonous metheglin, don bee robes, borrow their wings, and once again fly up to the place where dwells the race of gods.

Enthused, our voices change. Certain attitudes and postures of the gods become apparent in our movements. The verses come by themselves, wingèd words, clearer and surer than our minds could know.

> *Man is no longer an artist, he has become a work of art: the artistic power of all nature here reveals itself in the tremors of drunkenness to the highest gratification of the Primordial Unity.*
>
> *– Nietzsche, The Birth of Tragedy*

ON THE SEDUCTION OF ANGELS

Our Way is the seduction of angels. Trouble is, sometimes after you've seduced the angel, you find that it is really the angel that has seduced you. Then you find out that the angel has horns. Wonderful hard nubs of goatlike horn beneath her hair.

If you are a shaman of our way you don't care. In fact you are delighted. You love the horns. You kiss and fondle them. You weave intimate designs upon them. And are given woven charms in return.

Flower-songs, xochitl.

Anca zo zan nican tinechnahualan,
Have you bewitched me,
yectli ticchiuh ye motlatoltzin.
you have spoken lovely words.
Iz im axcan tlahuanquetl,
Here, now there is intoxication,
mah teh titlahuanquetl!
inebriate yourself!
Azo no netlacamachon tochan?
Is there happiness in our house?

– Aquiauhtzin of Ayapanco, ca. 1430–ca. 1500

Angels are hard to pin down. Ethereal. Their nature is movement. They are vectors, messengers.

Angels are *betweens,* and the between is of special interest to Hermeticists. One doctor of our way was visited at night by an angel who made love to her and then instructed her in the secrets of the preparation of the Great Stone. René Descartes was given the keys to mathematics.

◆

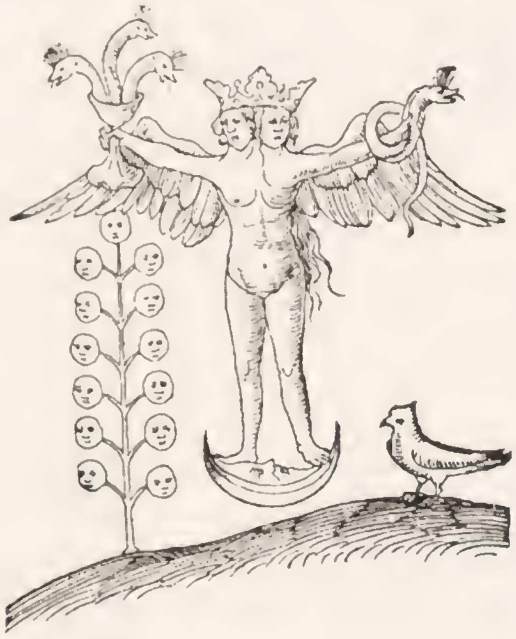
Hermetic. Hermaphrodite. Shamans are often sexual inverts. Or bisexuals. It's part of the between-ness. Female shamans were traditionally promiscuous in many cultures, their between-ness eventually becoming ritualized in temples. Don Jaime, who lives on the Rio Napo in Ecuador, had regular sexual relations with Sacha Huarmi, the green woman who takes care of wild animals.

◆

Angels incarnate into plants and springs, into trees, into certain trails and grottos. When they enter men or women we detect it by a subtle glow.

◆

Our way is reptilian sleep, the sleep of amphibians. Sleeping with one eye open. Walking into sleep secretly awake, into dreams without succumbing. Our way involves the will.



HERMAPHRODITIC ANGEL, FROM THE ROSARIUM PHILOSOPHORUM, 1550

◆

The work is carried out in solitude. Our way is teasing. From the beginning, or perhaps from before the beginning, there have been those who open themselves to possession. This method requires a partner, a translator. The seduction way is more like teasing: like a half-sleep, lying still and letting the angel approach. After that, some try to bind the angel, others wrestle; some prefer to blow softly on the angel's cheek and to whisper pleasing words.

Calliope, Erato, Urania.

◆

When the angel comes to your bed you might say no. We are not talking about a one-night stand here. This is an angel, not a strumpet. Maybe if you are not sick you can say no and then just wake up and go back to sleep and live an ordinary life: have a family, maybe a business or a profession, be blessed by the gods and respected by friends and neighbors. But if you are sick, or poisoned, the angel can threaten you, might say, "Make love with me or I will kill you, I will make you sick. I will make you crazy. I will steal your soul and hide it where neither you nor the psychiatrists will ever find it." In such a circumstance it is best not to play the martyr.

Our business is the seduction of angels, and one might wonder if it is a wise endeavor. Indeed.

> *We have come to give you metaphors for poetry.*
> *– Yeats, A Vision*

Contrary to what the theologians say, not all angels are men: there are male angels, female angels, and hermaphrodites.

Some angels are green. Some of them are called "fairies."

◆

Rituals invoke angels, especially sexual rituals. Threesomes, the minimal orgy. Or mere nudity: snakelike drawings glowing on bodies, breasts, and arms. Penises painted. Black light. Dancing.

Seduction. Seduced. We are all seduced. That's why we are here.

◆

When she comes she is naked. The way she moves, the way she dances, it is as if she holds a knife, a chopper, and the things you thought were absolutely true and real reel and bleed. She bears the Grail: it is a skull. She is naked, she stands on one leg and wraps the other around your head, her cup flows with blood. What she shows you is more real than Reality. Sometimes it smells of corruption. A thin film of gelatin sticks to hands, leaves, grass, tree trunks, the ground, hardening: collagen, cellulose. Some angels have red eyes.

◆

Some ideas are harder to realize than others. Once an idea is realized, it can be discarded. It's the ones you can't see that are dangerous. The dark angels. They can control you. Do. You can't see them because they are behind you.

Better to put your ideas in front.

> *Jeder Engel ist schrecklich.*
> *Every angel is terrible.*
> *– Rilke, Duino Elegies*

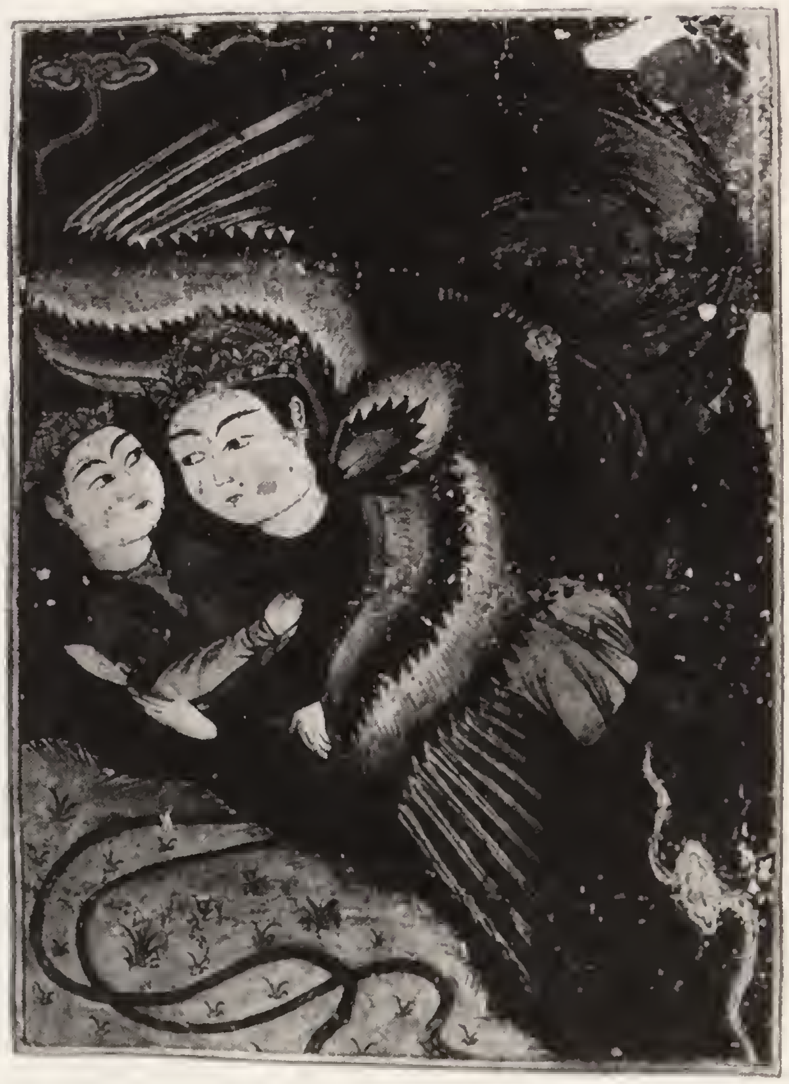
◆

Which consciousness can I trust? Some of them are sultry. Some of them are manic. Some are of the sort that don't believe any of the angels are perfect, and that that is desirable.

Some, them. Us, me. You, maybe, too.

◆

Angels are sometimes felt as an alien presence: a vacuum, a sudden absence. The conversation suddenly stops. No one knows what to say. So we say *un ange passe,* an angel passes.



FROM A TURKISH MINIATURE

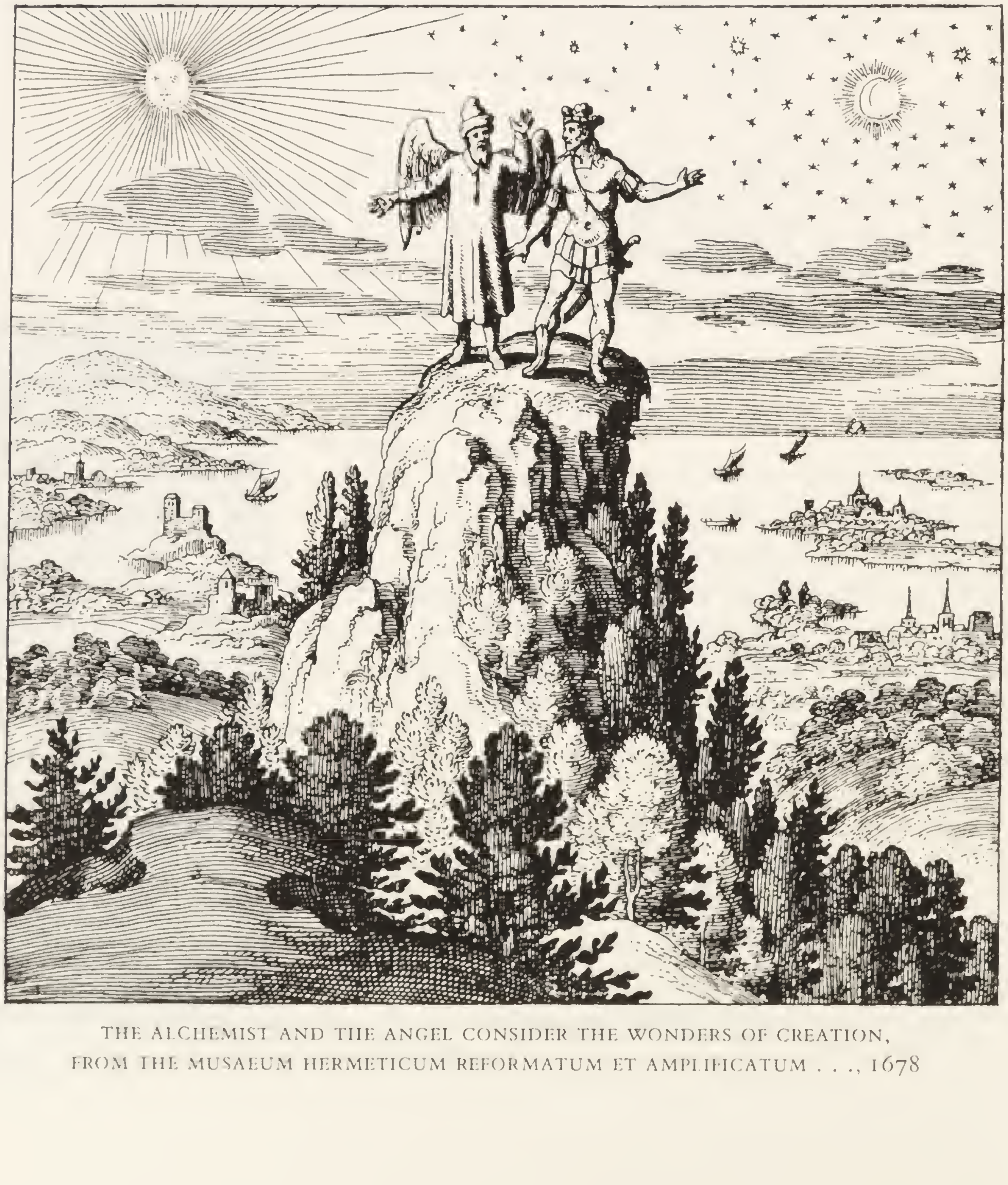
Words are angels: "winged words." Like arrows, like poison, the shaman's dart.

Words are the most terrible of angels.

The *pharmakeus* is like a baleen porpoise, a filter feeder, straining medicines from currents of charged signs, eddies. The adept of our way must sense unfailingly the instant an angel loses its wings. Unwinged words: τῆ δ' ἄπτεροεντα ἔπλετο μῦθος.

> *Expect poison from the standing water.*
>
> *– Blake, The Marriage of Heaven and Hell*

Sammael is the Angel of Poison. Sam-el: the "poison angel" who seduced Eve and begat Cain. All *poisoners* are children of Cain. This is the path of the Healer. We still carry the serpent.



THE ALCHEMIST AND THE ANGEL CONSIDER THE WONDERS OF CREATION,
FROM THE MUSAEUM HERMETICUM REFORMATUM ET AMPLIFICATUM . . ., 1678

ARTEMISIA ABSINTHIUM

Common Names Wormwood, absinthe, *la Fée Verte,* the Green Muse.

> *. . . that sage of the glaciers, absinthe!*
> *–Arthur Rimbaud (letter to Delahaye)*

As the term *absinthe* is used both as a synonym for "wormwood" and also as the name of the famous liqueur, we will use "wormwood" to refer to *Artemisia absinthium,* and "absinthe" to refer to the alcoholic beverage.

Related Species *Artemisia vulgaris:* mugwort (also called wormwood). Riparian, herbage full of *vertue:* nervine, stimulant, a wash for poison oak, protection against witchcraft, ghosts, thunder, and thieves.

Artemisia tridentata: sagebrush.

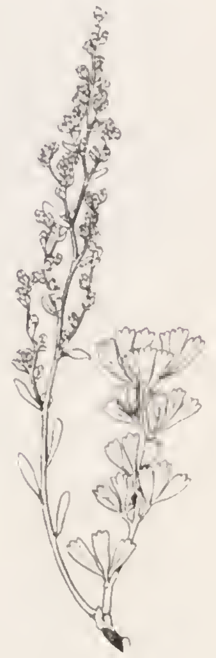
sweat-lodges: the sacred sage.
horses, cowboys, campfires –

the Great Basin . . .

Artemisia moxa: used for moxibustion in Chinese acupuncture.

Artemisia dracunculus: tarragon.

in a cream sauce, with wine and butter . . .



ARTEMISIA TRIDENTATA

Thujone, the major active ingredient of wormwood, is also found in cooking sage, *Salvia officinalis;* in tansy, *Tanacetum vulgare;* and in cedar trees, genus *Thuja.*

In addition to wormwood, absinthe (the liqueur) contains hyssop (*Hyssopus officinalis*), lemon balm (*Melissa officinalis*), fennel (*Foeniculum vulgare*), and anise (*Pimpinella anisum*). Some varieties contain sweet flag, *Acornus calamus.* Other absinthes include such herbs as coriander, veronica, marjoram, nutmeg, oregano, angelica, mint, chamomile, parsley, juniper, dittany, and spinach.

Taxonomy Family, Compositae. Munz, in *A California Flora,* states that Artemisia was the wife of Mausolus, King of Caria, but clearly the genus was named for the Goddess, as was recognized by Apuleius in the second century.

Earrings of the moon:
Artemis, goddess of wild things, chastity, fertility,
and the bloody hunt.

Dian's bud is the plant that Oberon uses to reverse the effects of the love potion in *A Midsummer Night's Dream.*

The genus is widespread in the Northern Hemisphere. Many species are medicinal; many have not been fully investigated. *Artemisia* is in the mayweed tribe, along with chamomile, yarrow, tansy, and coltsfoot.

Part Used Leaves.

How Taken As a liqueur, obtainable only with extreme difficulty. Absinthe is banned by most of the civilized world. Absinthe was legal in Spain until the end of the Franco reign, but is said to be impossible to obtain now, even there. Evidently the old Fascist "took it with him."

Absinthe is a clear bright-green liquid. As absinthe was bottled between 120 and 160 proof, it was rarely drunk neat, but usually diluted about five to one with water. More, because of the bitterness, absinthe was usually drunk sweetened with sugar. Since sugar is not very soluble in alcohol, a delightful ritual developed. A small amount of absinthe was poured into a glass. A special slotted spoon, with a flange, was placed on top of the absinthe glass and a sugar cube placed on the spoon. Then water was poured over the sugar cube, dissolving the sugar into the water, the water falling into the absinthe and mixing with it. Concentrated oils in the absinthe mix with the water and cloud, changing the color of the absinthe from a crystalline green to an opalescent yellow.

> *Green changed to white, emerald to opal; nothing was changed.*
> *The man let the water trickle gently into his glass, and as the green clouded, a mist fell from his mind.*
> *Then he drank opaline.*
>
> *– Ernest Dowson, "Absinthia Taetra"*

Wormwood may also be smoked. Rätsch (1992) reports that a Mexican species of *Artemisia* is smoked as a marijuana substitute. An Asian species of sagebrush, *Artemisia nilagirica,* is smoked by the Oraons of West Bengal for its hallucinatory effect (Pal and Jain 1989). The Zuni inhaled fumes of *Artemisia caruthii* to effect analgesia (Ott 1993). The sacred sagebrush of the Great Basin, *Artemisia tridentata,* is highly important in sweat lodge rituals. Jonathan Ott (1993) reports psychoactive effects from smoking *Artemisia absinthium,* an assertion that I have been able to verify.

Chemistry Thujone, an isomer of camphor, $C_{10}H_{16}O$, is the major psychoactive ingredient. Although by count of atoms, thujone is like camphor and menthol, its geometry and bonding structure is strikingly similar to Δ^9tetrahydrocannabinol, THC. A recent article in *Nature* suggests that the peculiar effects of absinthe may be related, neurologically, to the observed effects of *Cannabis.*

> *No, not the same, though the speed is reminiscent . . .*

Besides thujone, wormwood contains absinthin, $C_{30}H_{40}O_6$, one of the most bitter substances known.

The characteristic turbidity of absinthe when water is added to it is from the terpenes, which are soluble in alcohol but insoluble in water, precipitating to form an emulsion. Absinthe is a drink of terpenes: thujone from the wormwood, fenchone from fennel, pinocamphone from hyssop, anethole from anise, and citral from melissa. Thujone, fenchome, and pinocamphone are all ketones, isomers of camphor.

Effects

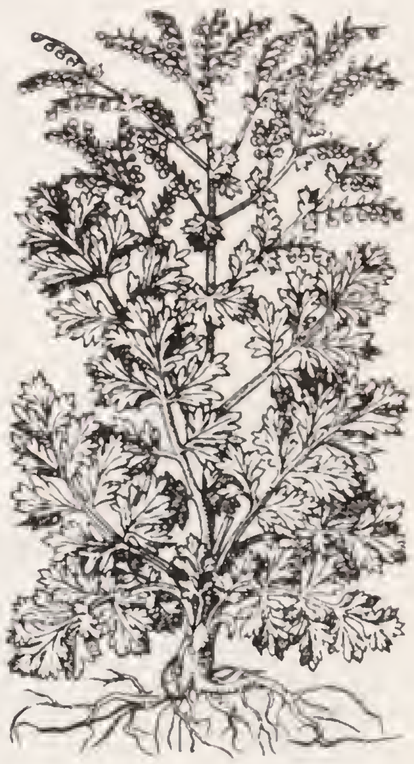
Absinthe can excite sexuality, stimulate ideas and conversation, or dissolve the brain.

> *Difficult choices, indeed.*

Absinthe is known as a narcotic, a stimulant, an aphrodisiac, a convulsant, and a hallucinogen. Medically, wormwood is an anthelmintic and febrifuge. Maurice Zolotow (1971) wrote that absinthe was without equal in counteracting airsickness and seasickness.

The Plant

Artemisia absinthium has been known and used by herbalists since ancient times. The name *wormwood* comes from Old English/Old Saxon *wermōd,* meaning something like "defend the mind." Because of the plant's efficacy as a vermifuge, the second syllable of the Middle English *wor-mod* was gradually assimilated into *worm-od,* and the word became *worm-wood.*



ARTEMISIA ABSINTHIUM,
FROM MATTIOL'S
COMMENTAIRES, 1579

In Greek the plant was *apsinthos* (αψινθος), the root of our word *absinthe.* Like *wermōd, apsinthos* is *o.o.o.,* "of obscure origin," but may mean "no wasting," reflecting wormwood's power as a general tonic, as ψίνω is Cretan for φθινω, "wasting."

Effects

> *It's like when you have just forgotten what it was you were about to say:*
> *that instant . . . extended.*

Like *Cannabis sativa, Artemisia absinthium* is a cognodysleptic. But the differences in absinthe's effects from both hemp and alcohol are distinctive enough to prompt us to place it in a new class, *rhapsodica,* on the path between *inebriantia* and *excitantia.* Absinthe again exemplifies the importance of admixtures. A lot depends on dosage, length of use, and intent.

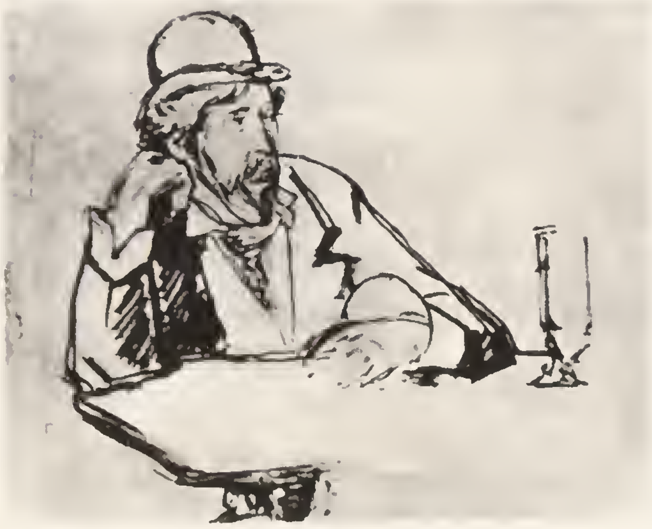
In small doses wormwood is a nervine and a digestive tonic.

> *It does not idle in the stomach lie*
> *But, like some God, give present remedy.*
> – *Abraham Cowley, Of Plants*

Wormwood is credited with curing chills, fevers, and bronchial ailments. Richard Burton recommended pillows stuffed with wormwood for insomnia.

I began my absinthe experiments with wormwood. Whereas absinthe liqueur is not available in the United States, wormwood the herb is. I first wanted to determine the effects of wormwood alone, so I brewed a strong tea. Wormwood is said to be the second most bitter substance known, after rue, and, having drunk extremely bitter potions before, I purposely made the wormwood tea especially strong, as I knew that I would never be able to drink a second cup, even if the tea were weak. Now bitter concoctions are not uncommon on our Poison Path, but wormwood, ahhhhh, is the type for the class!

The first effect was loosening of the sinuses. Perhaps purging would be more accurate. Much stronger this way than the Japanese wasabi horseradish. If you are ever stuffed up and need to liquify the inside of your skull, wormwood is worth considering!



GEORGE MOORE AT THE CAFE DE LA NOUVELLE ATHENES, EDOUARD MANET, 1878

The paintings I had seen of absinthe drinkers almost always portrayed them sitting at a cafe on a boulevard, probably in the early evening, dressed, men in coats, women in hats and high collars, summer in the air, with the drinkers staring off into space, lost in reverie with a vacant inward stare, and a half-empty glass of absinthe on the table in front of them. As I finished my cup of wormwood tea, I prepared myself with notebook and pencil, in order to record the effects.

After some minutes, I noticed that I wasn't writing anything. I was just staring off into space. And the space was beautiful. The light was brighter. Mottled sunlight filtering down through the walnut tree. It was afternoon. The temperature was perfect. I could feel the air on my arms and face. I got up and opened the door, letting the light and the outdoors into the room. I lay down on a couch where I could look out the door and up into the tree.

It was nice. Everything was nice. The light was different, softer and more intense at the same time. I felt great, actually. I gazed around my studio and spent a lot of time looking at my paintings.

A little tightness in the head and around the eyes . . .

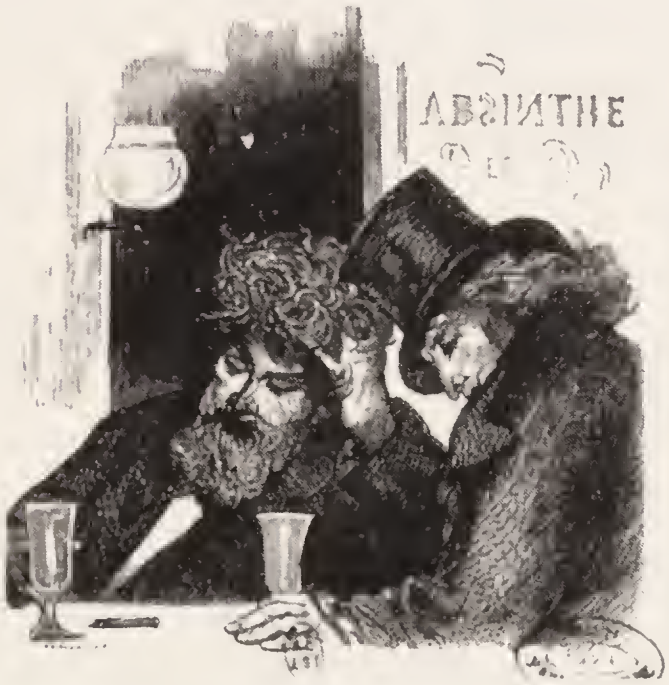
The convulsive properties of thujone are exactly like those of camphor. Large doses of camphor were once used to induce convulsions in mental patients, a technique that today has been replaced by the application of large jolts of electricity.

The *Hevarja Tantra* mentions drinking camphor in a ritual context.

Pharmacology

Complex, because of the multiple and synergistic effects of the various herbs and alcohol. In 1708, Johan Lindestolpe, in his book *De Venenis* (On Poisons), claimed that chronic use of wormwood caused permanent nerve damage, and said that his information was based on personal experience. M. Cadéac and A. Meunier, two French scientists, investigated all the ingredients of absinthe in 1889, attempting to determine the effects of each. They found that the ingredients fell into two groups: the *epileptisants,* including hyssop, wormwood, and fennel; and the *stupefiants,* anise, angelica, oregano, and melissa. They declared all of them dangerous. In 1980, Y. Millet (Conrad 1988) and five colleagues replicated some of the earlier studies, finding that both anise and hyssop oils, injected into rats, could cause convulsions. Millet's group characterized the effects of the anise injections as "like opium," and concluded that hyssop was the most dangerous of the herbal ingredients.

In both the 1889 and the 1980 studies, however, the quantities of essential oils injected into the rats were far higher than it would be possible to drink, even with a whole bottle of absinthe. The executive editor of *Clinical Toxicology,* Dr. Richard Rappolt, reported in 1979 that the most harmful ingredient in absinthe was not wormwood or thujone, but alcohol (Conrad 1988). Jean-Charles Sournia (1990) goes further and states flatly that the ban on absinthe "had no scientific basis." One opposing viewpoint, by Wilfred Niels Arnold, was published in *Scientific American* in 1989. Arnold states that "the interdiction [on absinthe] was tardy but surely justified." Curiously, however, he cites no studies more recent than 1874 to back up his assertion.



ABSINTHE DRINKERS, 1870S

But dosage is everything. According to Duke (1985), wormwood contains up to 1.7 percent essential oil, 3 to 12 percent of which is thujone. So we could say that wormwood averages 1.5 percent essential oil and 0.15 percent thujone, by weight, and probably be on the high side. By multiplication, that means that absinthe made from my recipe at the end of this section contains forty-five milligrams of thujone per liter of finished product. Mild convulsions in rats begin at around thirty milligrams of injected thujone per kilogram of body weight (the LD50 for mice is 134 mg/kg). I weigh eighty kilograms. Therefore, a minimally toxic dose of thujone for me is 2.4 grams, or fifty bottles of absinthe.

One glass of absinthe (forty milliliters of absinthe plus two hundred milliliters of water) contains less than two milligrams of thujone, $\frac{1}{1200}$ of a minimally toxic dose. For a substance to be classified as GRAS (Generally Recognized As Safe) by the Food and Drug Administration, their safest category, the nominal serving must be at least 100 times smaller than the minimum toxic quantity. It appears from my arithmetic that absinthe is GRAS by a factor of twelve.

Effects

> *Absinthe makes the tart grow fonder.*
>
> *– Ernest Dowson (Flower and Mass 1967)*

> *L'Absinthe, bue un soir d'hiver,*
> *Eclaire en vert l'âme enfumée.*
>
> *Absinthe, on a winter evening,*
> *Illumines the smoky soul in green.*
>
> *– Charles Cros, "With Flowers and with Women"*

Experiments with wormwood on animals seem to verify that it produces both auditory and visual hallucinations. In a scene reminiscent of H.P. Lovecraft, dogs injected with absinthe were reported to stand barking at blank walls.

The Plant

Wormwood is said to have grown up along the path the serpent took when cast out of Eden. Ironically, when God next returned to walk on earth, some believe that it was wormwood that was offered to Him on the sponge in His hour of destiny, to ease His suffering.

> *There fell a great star from heaven, burning as it were a lamp. . . . And the name of the star is called Wormwood.*
>
> *– Rev. 8:10,11*

Others, however, say that wormwood was a gift of Diana, and was given to Chiron the centaur, the ancient master of leechdoms.

Artemisia is sacred to Vishnu and Shiva.

History

In the ancient world absinthe was prepared as an infusion of wormwood leaves in wine and taken as an herbal tonic. Galen wrote of absinthe's virtues, as did Hippocrates and Pliny. Dioscorides included wormwood in *De Materia Medica,* and stated that it was an insect repellent as well as a vermifuge.

> *Wormwood is said to kill fleas, so I once rubbed down my cat with a handful of fresh wormwood leaves. The cat, of course, immediately began cleaning himself. He licked, scowled, shook his head, and gave me such a dirty look that I never repeated the experiment.*
>
> *I use sprigs of wormwood in trunks and clothes closets, to repel moths and vermin.*

Dioscorides recommended adding wormwood juice to ink, saying that it would keep mice away from the papyrus.

In the Middle Ages absinthe was used as a cure for flatulence, effective in dogs as well as in people. The English brewed an ale with wormwood, called *purl.* Samuel Pepys mentions wormwood ale in his diary.

He hath made me drunken with wormwood.
– Lam 3:15

Absinthe, as we know it now, was invented by a country doctor in Switzerland, or so the folklore goes, in 1792. The doctor's name was Dr. Ordinaire, and his absinthe quickly acquired a local reputation as a cure-all. When the good doctor died, he willed his recipe to his housekeeper, for whom, it was said, he had an affection. The housekeeper passed the recipe on to her two daughters, who continued to make and sell the doctor's tonic. A certain Major Dubied was so impressed with the medicinal and aphrodisiacal virtues of the sisters' product that he bought not only a case of their bottles but also their recipe. One suspects that it was the aphrodisiacal rather than the medicinal properties that inspired the major's purchase, because he gave the recipe as a wedding gift to his son-in-law, Henri-Louis Pernod. Pernod began manufacturing absinthe on a commercial scale in 1805.

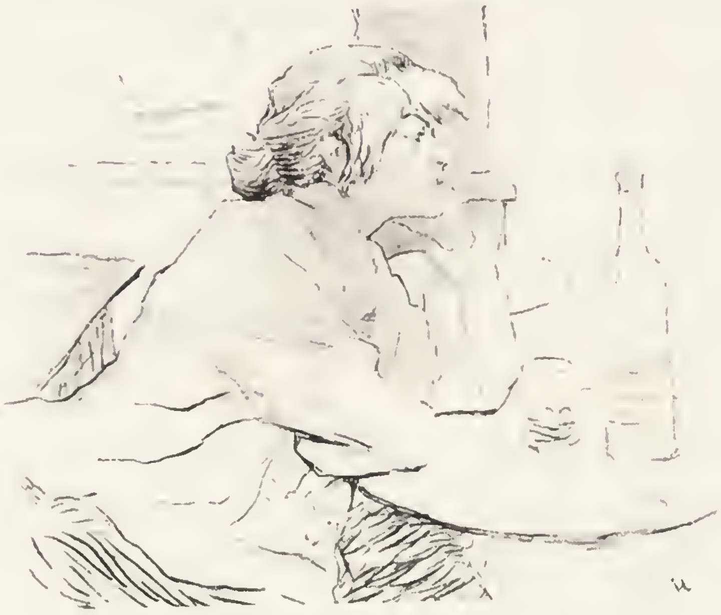
The good I do Venus herself will own,
She, though all sweets, yet loves not sweets alone.
She wisely mixed with my juice her joys,
And her delights, with bitter things alloys.
– Abraham Cowley, Of Plants

French soldiers fighting in Algeria in the 1840s drank absinthe as a preventative against malaria and other diseases, and that sparked the first big surge in absinthe's popularity in France. (The use of absinthe as an antimalarial medication is not without scientific support. In 1990, M. Zafar and his associates found that alcoholic extracts of *Artemisia absinthium* given orally were nearly as effective in suppressing malarial *Plasmodium* in mice as was the standard antimalarial drug chloroquine. Other species of *Artemisia* have been proven effective even against quinine-resistant strains of malaria. Absinthe's efficacy as a febrifuge is also well supported.)

The soldiers brought the taste back to Paris, and absinthe drinking was well established by 1859, when Edouard Manet painted "The Absinthe Drinker." The painting created a small scandal, artists and intellectuals taking sides to attack or defend the painting, a controversy that foreshadowed the history of absinthe in France for the next sixty years.

The story of absinthe reads like a who's who in art and literature: Manet painted absinthe themes, and his friend Charles Baudelaire drank absinthe (though he later rejected it in favor of opium). Verlaine and Rimbaud seem to have drunk absinthe more or less continuously. Van Gogh drank absinthe. Oscar Wilde drank a lot of absinthe, and wrote about it. Ernest Dowson drank it. Poe drank it. Degas drank absinthe in the cafes and then painted absinthe, stirring up a scandal in London. There was something about light seen through an absinthe intoxication that seemed to feed the impressionists. Henri de Toulouse-Lautrec drank absinthe, and painted it frequently. Paul Gauguin liked absinthe, and was somehow able to continue drinking it even in Tahiti. Alfred Jarry called absinthe "Holy Water," and his friend Pablo Picasso painted pictures of absinthe a number of times. Jack London liked absinthe.

What other psychotropic concoction, excepting perhaps wine, has produced as large a body of laudatory poems in the last two thousand years as has absinthe?



THE DRINKER, HENRI DE
TOULOUSE-LATREC, 1889

It was the national drink of France for two generations. It was finally killed by World War I and the growing forces of Prohibition, and was buried with the generation that loved it most.

The French military intelligentsia, if that is not an oxymoron, were strongly influenced by the philosopher Henri Bergson. They believed that France could win the war if they had enough *élan vital.* The inability of the French generals to understand the effect of machine guns on frontal assaults has always been an enigma to me, but so it was. The generals believed that the reason the assaults were failing was that the troops did not have enough élan. They sought the cause for this deterioration of French élan, and the culprit they found was absinthe. Absinthe was outlawed by martial law.

After the war everything was different. The French were more interested in American drinks like the cocktail than in the old-fashioned absinthe. The American expatriots, on the other hand, were very interested in absinthe and were able to obtain it through the black market. Ernest Hemingway, who liked absinthe enough to bring a supply with him back to Key West, agreed with many earlier writers by saying that absinthe was not a hallucinogen, but that it just rearranged one's ideas in new ways:

> *In this, the real absinthe, there is wormwood. It's supposed to rot your brain out but I don't believe it. It only changes the ideas.*
>
> *– For Whom the Bell Tolls*

So did absinthe get a bad rap? Yes and no. One of the spearheads of the anti-absinthe campaign was the defense plea entered by a man named Lanfray in 1906. Lanfray, an alcoholic who drank a bottle of wine and a bottle of brandy every day, as well as a couple of glasses of absinthe, had murdered his wife and family in a psychotic rage. His defense was that he had been rendered temporarily insane by the absinthe. Unlike Dan White, who beat his double murder rap of shooting San Francisco mayor George Moscone and supervisor Harvey Milk by claiming temporary insanity from eating "Twinkies," Lanfray was convicted. Nonetheless, the Prohibitionists used the case to successfully get absinthe outlawed in several cantons in Switzerland. Harry Anslinger availed himself of the same strategy thirty years later, when there was a similar murder in Florida, to prove that *Cannabis* transformed its users into killers.

Still, absinthe is clearly a poison. Whether it is more poisonous than the alcohol in which it is dissolved is certainly doubtful. Many inferior absinthes were being sold in France, some mixed from industrial alcohol and essential oils. Unscrupulous manufacturers would add copper sulphate, or worse, antimony salts to the mixture to give it the characteristic green color and turbidity that real absinthe has. Heavy metal poisoning would be a certain result of ingesting such abominations, and it is likely that many of the horror stories about absinthe were caused by such toxic adulterations.

But none of this proves that absinthe is safe.

Correspondences

Nicholas Culpepper assigns wormwood to Mars, perhaps because of the herb's warming quality.

Effects

> *After the first glass you see things as you wish they were. After the second,*
> *you see things as they are not. Finally, you see things as they really are,*
> *and this is the most horrible thing in the world.*
>
> – *Oscar Wilde (in Conrad 1988)*

> *Absinthe, mother of happiness, O infinite liquor,*
> *you shimmer in my glass pale and green like the eyes*
> *of the mistress I once loved. . . .*
>
> – *Gustave Kahn, "Absinthe"*

> *Whiskey and beer for fools; absinthe for poets; absinthe has the power of the magicians; it can wipe out or renew the past, and annul or foretell the future.*
>
> – *Ernest Dowson (Flower and Mass 1967)*

> *. . . It smelled like bottled summer.*
>
> – *Barnaby Conrad (1988), describing his first sniff of absinthe*

Poesis

When absinthe was outlawed in France and Switzerland, Pernod Fils was forced to make an absinthe without any wormwood. The closest product today to real absinthe is Pernod 51, which contains all of the original herbs except for the wormwood, the percentage of anise being increased to make up for it. It is possible to create a pretty good absinthe by simply adding the wormwood back in.

I say "simply," but there are several steps involved, and once mastered there is no reason not to make absinthe from scratch. There were always regional absinthes in France, and the mixture of herbs in the drink was never canonized completely, sweet flag, dittany, angelica, oregano, coriander, and nutmeg being included in some absinthes and not in others. My own recipe is based on that most excellent of formularies, *Dick's Encyclopedia of Practical Receipts and Processes,* and other nineteenth-century formularies.

To Prepare Absinthe by Distillation

30.0 g wormwood
8.5 g hyssop
1.8 g calamus
6.0 g melissa
30.0 g anise seed
25.0 g fennel seed
10.0 g star anise
3.2 g coriander seed

Put the dry herbs in a large jar. Dampen slightly. Add 800 milliliters of 85–95 percent alcohol. Wine spirits make a better product than pure grain alcohol. Let it steep for several days – a week is better – shaking occasionally. Then add 600 milliliters of water and let the whole macerate for another day. Decant off the liquid, squeezing as much from the mass of herb as possible. Wet the herbs with some vodka and squeeze again. Recipe should give a little over a liter and a half of green liquor. It must then be distilled. Inferior recipes skip this step, but what they produce is not worthy to be called *absinthe.*

In the distillation, change the receiver when the distillate turns yellow: those are the faints. You can save the faints and add them to future distillations, but they will taint the flavor if added directly to the product. Just use the good stuff. The next step is to color and finish the liqueur by another round of maceration.

Color the distillate by again adding:

4.2 g mint
1.1 g melissa
3.0 g wormwood
1.0 g citron peel
4.2 g liquorice root

Let the herbs macerate for another three or four days. Decant, filter, bottle. You will probably want to carefully add some concentrated sugar syrup to the blend. The result will be a Swiss style absinthe of about 135 proof. Recipe makes one liter of absinthe.

To Prepare Absinthe from Pernod

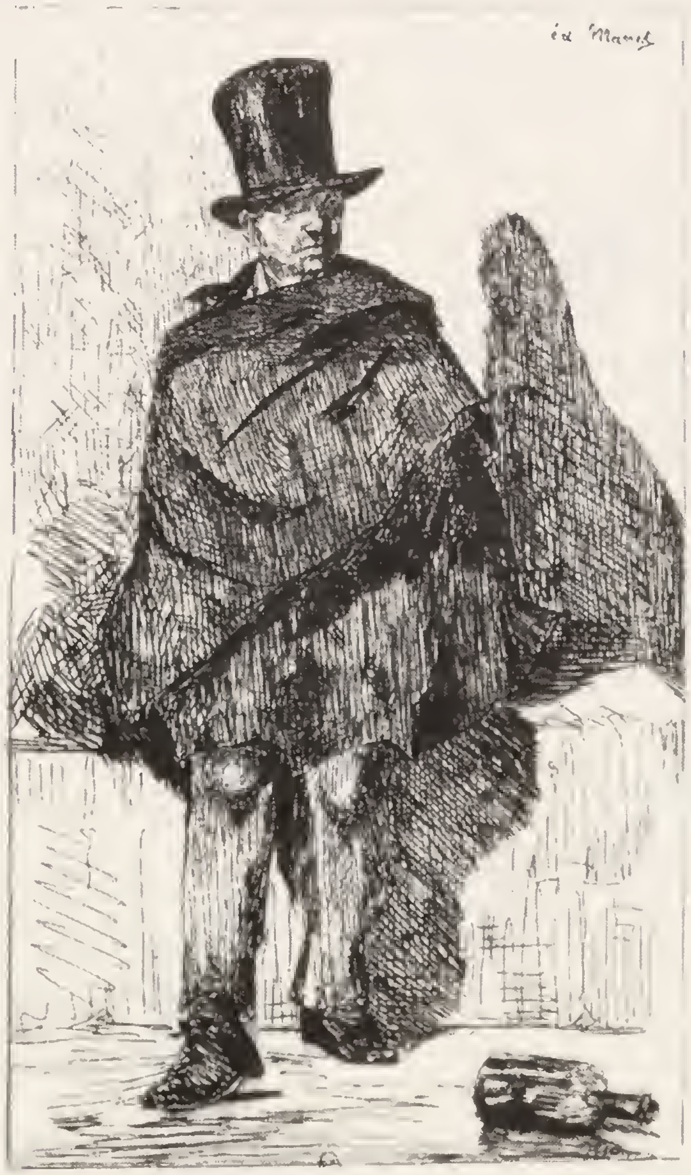
If you want to doctor a bottle of Pernod, you need the essential oil of wormwood or an alcoholic distillate of the same. Absinthe contains the equivalent of about one ounce (thirty grams) of wormwood per quart or liter of liqueur. One way to prepare the absinthe is to macerate four ounces (120 grams) of dried wormwood in a quart (or liter) of alcohol, and then add a couple of cups of water and distill off the essence. The distillation, after the maceration, is vital. Whereas the distillate explodes into minty and aromatic flavors, the residue, with equal, nay, surpassing vehemence, explodes into astonishing, persistent bitterness. Add the distilled essence to the Pernod in a proportion of one to four.

If you can obtain the essential oil of wormwood (without the thujone removed), your job is easy: just dissolve 0.3 or 0.4 milliliters of the oil in some alcohol and add it to a quart or liter of the *pastis.*

But it is just about as easy to make the absinthe from scratch. Try it the old way first.

The Ally

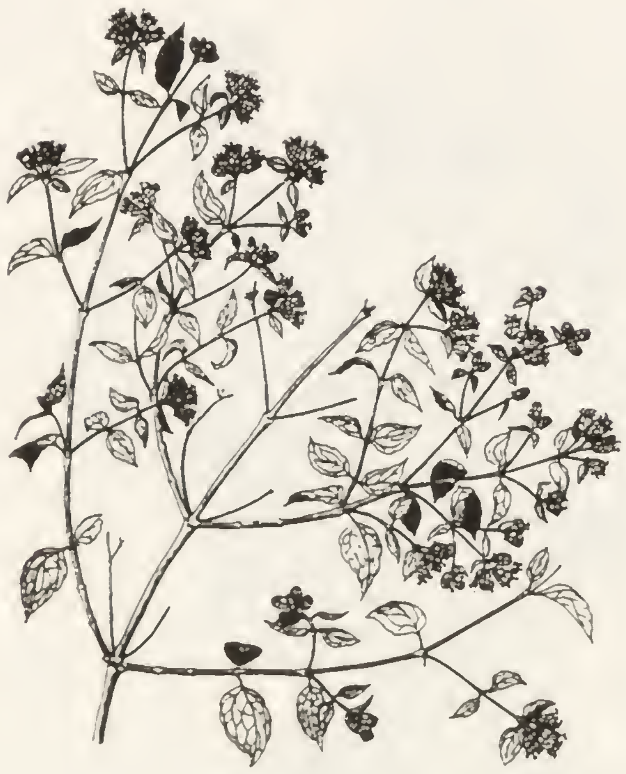
If you are sick, it will cure you.
If you are depressed, it will ease your soul –
If you are smitten, desirous to touch
the one so long beyond your grasp,
it will give you words
and a long green hour, together, to speak them.



THE ABSINTHE DRINKER,
EDOUARD MANET, 1862

CALEA ZACATECHICHI

Common Names	Dog grass, *Thle-pelakano,* "leaf of God." *Zacatechichi* is Nahuatl for "bitter grass." The bitterness is in a class with *Artemisia absinthium.*
Related Species	Not all races are psychoactive, even within the genus. Needs study.
Taxonomy	Sunflower family, Asteraceae, found from central Mexico south to Costa Rica. The plant likes open ground; readily colonizes disturbed ground and land that has been burned over. The genus *Calea* is neotropical and contains a hundred other species besides *zacatechichi.*
Part Used	The dried leaves. Fresh leaves are used medicinally and would probably be as effective as infusions of the dried leaves.
Chemistry	Contains $\frac{1}{100}$ of 1 percent by weight of an unidentified alkaloid, $C_{21}H_{26}O_8$, and a large number of triterpenes, flavonoids, sesquiterpene lactones, organic acids, and a glucosidelike bitter principle. The source of the psychoactivity is unknown. Most of the research has focused on the alkaloid, but the sesquiterpene lactones certainly deserve attention.



CALEA ZACATECHICHI

How Taken Drink an infusion of the dried leaves and lie down in a darkened place. Then smoke a cigarette of the dried leaves. The "alert" that the plant is taking effect is when you can feel your pulse and heartbeat.

The bitterness alone, however, is so unsettling that such finer points may be missed. Use a good palmful of dried leaf per cup.

Effects Oneirogenic: induces lucid dreaming.

Pharmacology Unknown.

The Plant Natives use the leaves as an insecticide. In the Yucatan, the leaves are added to baths for skin eruptions. Internally, the herb is taken for fevers, colic, diarrhea, and cholera. Dried plants were exported to Brazil specifically for Asiatic cholera.

The leaves have been shown to contain a central nervous system depressant. Scientific testing has also shown that the leaves possess antiatherogenic properties – a virtue of some promise for a heart attack culture such as our own.

The Chontal, in Oaxaca, who use the plant, recognize that some plants are oneirogenically active while others are not. Ethnobotanist José Luis Díaz is trying to determine if the active plants constitute a new species.

The Ally The ally clarifies the senses. For some, the transmission is visual; for others, the ally speaks in voices.

Effects You may or may not get lucid dreaming. Some people do, others don't. Díaz (1986) conducted double-blind experiments and did find an increase in meaningful dreams reported by the subjects given *Calea.* Even without the dreams, a sense of well-being is very common, and can last for a day or more.

Poesis On a hunch that a volatile terpene might be the active ingredient in Calea, rather than the alkaloid or some other fixed or bitter compound, and that the terpene might be separated by distillation, I prepared an absinthelike *Calea* liqueur. Preliminary tests are, alas, disappointing. Not that the beverage is disagreeable – far from it – but in an effort to clearly feel some effects from the herb, all subjects became so thoroughly inebriated that they were unable to continue the experiment. These results are still preliminary, but it looks as if the oneirogenic activity and the bitterness, if not derived from the same compound, are at least traveling companions.

The Ally

> *There is a problem with your poison path. This "ground state calibration" is very nice but it misses the point. You use ground state calibration as a means to an end, as a temporary retreat, like a visit to a spa.*
>
> > "Misses the point" . . . spoken with great spiritual authority, for words in a dream!
>
> *But I know I'm dreaming, so I'm awake, right?*

EUPHORICA

Approach the God of Dreams with sword drawn.

The First Doctor was a woman wise and compassionate. Because of her skill, her receptivity, her strength,and her integrity, the gods looked upon her with favor.

The First Doctor had many patients, but few medicines. She had songs, she had cereals, but the terrible cries of her patients drove her into the mountains seeking a vision of power.

In the mountains she fasted, then ate. Sang, then was quiet. She waited, she lived alone in the mountains. She met the animals, and then she met the plants.

And the gods – the spirits of the earth, the spirit of the sky, the spirits of the plants and the animals and the spirits of her ancestors – pleased with her, granted her a wish.

Briefly, the First Doctor considered. There were so many things for which one might ask: power, sustenance, energy, vision, love.

"You may have whatever you wish," the gods repeated, "from the least to the greatest."

"Then, O Gods, give me that medicine that cures pain, the medicine that eases suffering."

And the gods responded. They gave her the opium poppy, and they told her she had chosen wisely.

"After food," they told her, "this plant is our greatest gift. Use it wisely and unselfishly. It is never wrong to ease the suffering of those who do not know the secret. But remember, for yourself, who are a doctor, this plant shall ever be a poison."

> *The danger is smoking as a defense against some moral disequilibrium. Then it is difficult to approach the drug in the way it must be approached, as wild beasts should be approached – without fear.*
>
> *– Jean Cocteau, Opium: Diary of a Cure*

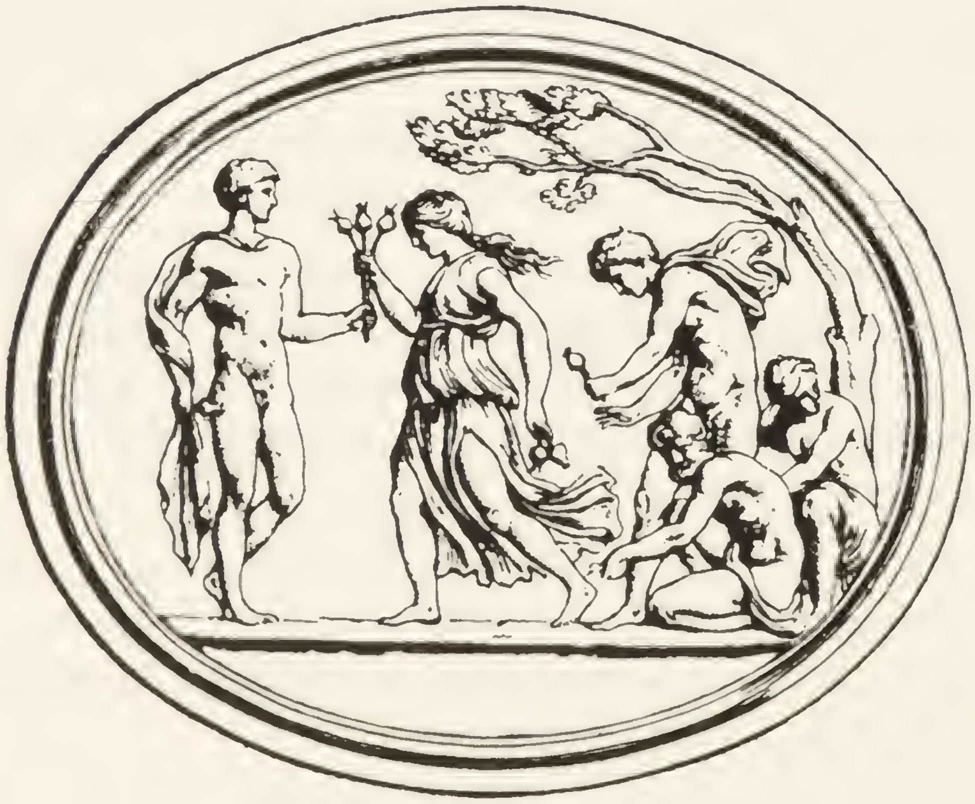
> *Wine robs a man of his self-possession: opium sustains and reinforces it . . . wine constantly leads a man to the brink of absurdity and extravagance; and, beyond a certain point, it is sure to volatilize and to disperse the intellectual energies; whereas opium always seems to compose what had been agitated, and to concentrate what had been distracted.*
>
> *– Thomas De Quincey, Confessions of an English Opium Eater*

> *Alcohol provokes fits of madness. Opium provokes fits of wisdom.*
>
> *– Jean Cocteau, Opium: Diary of a Cure*

Euphoria is a middle child, born between consciousness and sleep. It is a condition of peace and well-being, like that which follows orgasm, and not everyone reacts to it the same way. Some are entranced by the radical stillness, and lie unmoving, without thoughts. Others are so glad to be freed from the rude pushing and shoving of desire that they take advantage of their reprieve and set about finishing some piece of work. Some just let their minds drift, half awake, half dreaming, and let the yearning visions try to coax their souls up from the somatic twilight of their bodies.

> *Perhaps we desire death: or why is poison so sweet?*
> *Why do the little Sirens*
> *Make kindlier music, for a man caught in the net of the world*
> *Between news-cast and work-desk, –*
> *The little chirping Sirens, alcohol, amusement, opiates,*
> *And the carefully sterilized lust, –*
> *Than the angels of life?*
>
> *– Robinson Jeffers, "Sirens"*

Pain is the first teacher we deny.



THE GODDESS OF NIGHT, BEARING POPPIES

PAPAVER SOMNIFERUM

Common Name Opium poppy.

Related Species *Papaver setigerum, Papaver bracteatum, Papaver orientale, Papaver pseudo-orientale, Papaver rhoeus,* and ninety other species of *Papaver.* Also *Eschscholtzia californica, Argemone glauca,* and *Argemone mexicana.*

Part Used The alkaloid-rich latex is the source of opium. The nutritious seeds are important as a food crop and as a source of oil. The young leaves can be eaten as potherbs.

There are small amounts of morphine throughout the plant, possibly excepting the seeds, but it is only in the lactifers in the walls of the seed capsule that the alkaloid is produced in quantity.

Effects

> *In small quantities it exhilarates the mind, raises the passions, and invigorates the body: in large ones it is succeeded by intoxication, languor, stupor and death.*
>
> – *Erasmus Darwin, The Loves of the Plants*

> *Opium expands boundless space.*
>
> – *Charles Baudelaire, Artificial Paradise*

Taxonomy Family Papaveraceae. *Papaver somniferum* is a cultigen, one of a very select group of plants with extremely ancient associations with human beings. Although escaped populations are sometimes able to survive in a favorable environment, *Papaver somniferum* is not found in a truly wild state.

The origins of the opium poppy are still being investigated. Many researchers believe the wild setaceous poppy, *Papaver setigerum,* to be the ancestral species, or that the two species share a common ancestor. Other paleobotanists disagree, noting that *Papaver somniferum* is diploid, whereas the setaceous poppy is usually tetraploid.

Of the many species of poppy, *Papaver somniferum* and *Papaver setigerum* are the only two containing morphine in significant quantities. Various researchers have reported morphine and like alkaloids in *Papaver rhoeus, Eschscholtzia mexicana, Argemone mexicana,* and even the hops plant, *Humulus lupulus,* but the findings are doubtful.

Pharmacognosy In 1803, a German pharmacist named Friedrich Sertürner, while working with opium, isolated a substance that reacted chemically like a base. For this reason he named it an *alkaloid.* It was the first alkaloid ever discovered. Sertürner found that his alkaloid was highly narcotic, and he soon determined that it was the principal active constituent of opium. He named it after Morpheus, the god of dreams. The discovery of morphine was analogous to the discovery of the spirit of wine: a power within a power, and had like social consequences, though in smaller degree.

Since Sertürner's discovery, more than forty alkaloids have been identified in opium. The opium alkaloids fall into eight major groups, represented by benzyl isoquinoline, hydrophenanthrene, protopine, phthalide-isoquinoline, protoberberine, aporphine, benzophenanthridine, and papaverubine. Of these, the phenanthrene group, including morphine, codeine, and thebaine, and the isoquinoline group, including narcotine and papaverine, are the most important.

How Taken As pills, plaster, or wash; as smoke, drink, or suppository – opium is compounded with a large variety of admixtures.

The simplest way to take opium, and perhaps the oldest, is as *mekonium,* an infusion of chopped-up poppy capsules in water. The Greeks drank *mekonium,* or sometimes *mekonium* mixed with wine. The pharmaceutical preparation *Vinum Opii* is opium in wine flavored with cinnamon and cloves.

> *A social worker named Eric Detzer who was a poppy addict for many years would just drop six to twelve poppy heads into a food processor, add a cup of hot water, and whizz them up. It made a milky green juice which he then filtered through a strainer and drank. Adding some lemon juice would have helped both the extraction and the taste.*

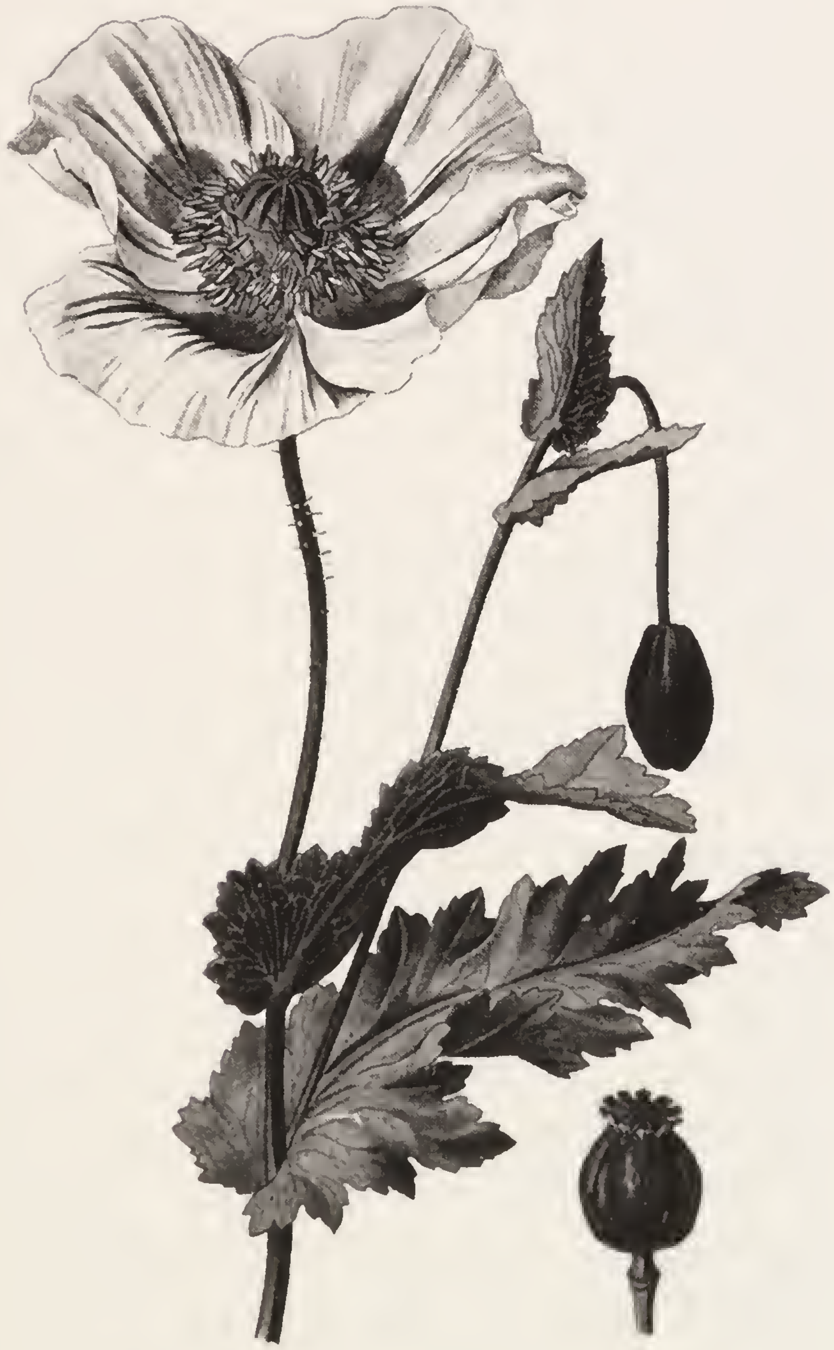
There is evidence that opium was smoked by the Minoan people, on Crete. But after 1500 BC, the art of opium smoking disappeared for three millennia until it was rediscovered by the Chinese in modern times, with the encouragement of the British, who were trying to build up a trade surplus. Opium is smoked in a special pipe that facilitates vaporization of the tarry goo without actually burning it.

a characteristic odor – musty
faintly sweet and almost nutritious –
    thick-smelling, not earthy,
but subterranean, not unpleasant,
but the smell of something
    lived and died deep in darkness:
the smell of the food that the dead eat.
But they are friendly dead.

There are five kinds of commercial opium. The first is *druggist opium.* Druggist opium is raw opium meant to be used to manufacture medicinal opium. It need only have a morphine content of between 8 and 10 percent. The second kind of commercial opium is *manufacturers' opium,* which is used for the isolation of the principal alkaloids: morphine, narcotine, and papaverine. For this grade the highest concentration of morphine is desired.

The third kind of commercial opium is *prepared opium,* the soft opium used for smoking. In India it is called *chandu. Chandu* is prepared in various ways, some of them quite complex and requiring practiced skill. Raw opium is dissolved in boiling water, and then filtered and concentrated. The concentrate is then roasted over a low heat, which gives it a characteristic aroma. The brittle, roasted opium cakes are then extracted with water, cold water first, and a second time with warm water. The cold water extract is the best. The extracts are concentrated until the water content is 23 to 26 percent. Sometimes sugar or aromatic substances are added. Also, and this is a point of debate among opium smokers, dross can be added at this time. Dross, the charred residue from opium pipes, besides containing a great deal of morphine, also contains secondary products that are said to greatly contribute to the stupefying effect of opium. Not all opium smokers appreciate that effect.

The last step in making *chandu* is to pack it into sealed earthenware jars to let it "ferment" for four to six months. This is to perfect the flavor and aroma of the product. The best *chandu* may have a morphine content of 10 to 13 percent, while ordinary *chandu* may only have 7 or 8 percent.



PAPAVER SOMNIFERUM, FROM KOHLER'S MEDIZAI-PLANZEN-ATLAS, 1887

The last two kinds of commercial opium are the opiums used for opium sticks and for eating opium. This opium is little processed, basically being used in its raw state.

Charbughra is a mixture of wine, hashish, and opium, chased with a chai-style ginger-cardamom tea. . . . Now, anyone for adding a little coca perhaps, just so nobody feels left out?

Medicinal opium preparations include *Opium Pulveratum,* powdered opium; *Opii Deodorati,* deodorized opium; *Pilula Opii,* pill of opium; *Extractum Opii,* extract of opium; *Pulvis Ipecacuanhae et Opii,* Dover's Powder; *Trochisci Glycyrrhizae et Opii,* Wistar's cough lozenges; *Emplastrum Opii,* opium plaster; *Tinctura Opii,* laudanum; *Tinctura Opii Camphorata,* paregoric; *Vinum Opii; Tinctura Opii Composita,* Squibb's diarrhea mixture; and *Acetum Opii,* black drop.

Laudanum is a deodorized alcoholic tincture with the narcotine removed, and was popular in the nineteenth century, especially with women. Taking laudanum was more socially acceptable for women than was drinking alcohol. Paregoric was laudanum mixed with camphor, glycerin, and anise, and was commonly given to children. (Someone once called absinthe paregoric for adults.) Numerous patent medicines have contained opium.

In addition, the salts are extracted and used extensively: morphine, codeine, and a number of synthetic and semisynthetic derivatives.

Heroin, diacetyl morphine hydrochloride, is another opium derivative, but it is no longer used medicinally in the United States because of its abuse.

Effects Warmth and well-being. Ease. Sociability. Dreaminess.

Sometimes, or maybe:
Nausea. Nightmares. Solitude.

But that comes later.

CORRESPONDENCES

ACTIVITY	Contemplation
ANIMAL	Ibis, Swan
ARCHETYPE	The Mama's Boy, The Junkie
ART FORM	Stone Carving
BODILY FUNCTION	Elimination
BODY PART	Blood
BUDDHA REALM	Padma
CHORD	Minor
COLOR	Red-Purple
COSMIC ENTITY	Black Hole
CRUTCH FOR	Fear of Infinity
DIMENSION	Line
DISCIPLINE	Leechdoms, Perfumery
ELEMENT	Air
FORM OF ENERGY	Water Wheel
FORM OF IGNORANCE	Egoism
GEMSTONE	Sapphire, Moonstone
GEOMETRY	Spherical
GOD	Asclepius
GODDESS	Demeter, Hecate
GRAMMAR	Context Sensitive
HISTORICAL AGE	Bronze Age
HUMOUR	Melancholia

Pharmacology

Several of the alkaloids present in opium have opposing effects, and the combined effect is distinct from the effects of, say, morphine alone. The major alkaloids are morphine, 8–14 percent; codeine, 2–3 percent; narcotine, 5–8 percent; papaverine, 0.5–2.4 percent; and thebaine, 1–2 percent. Thebaine is a strychnine-like convulsant, stimulating the smooth muscles. Its presence in opium tends to counteract one of the most dangerous actions of morphine – the depression of the respiratory system – a common cause of death in morphine or heroin overdoses. Thebaine is a precursor to the chemical synthesis of codeine. Antidrug forces are trying to substitute *Papaver bracteatum* for *Papaver somniferum* as a source of opiates, as *Papaver bracteatum* contains no morphine. The thebaine produced by the farmers would then have to be sold to the industrial countries to be converted into codeine chemically.

Morphine still has its uses, however, even in the United States. It is considered essential for radiation sickness, and was allegedly stockpiled for that contingency as part of cold war planning.

Morphine, the soldier's friend.

Opium is the archetypal medicine, and morphine is its essence. Morphine is the most powerful naturally occurring analgesic in the world, and the synthetics use opium as their precursor. Morphine stimulates the spinal cord and increases the tone of involuntary muscles, such as the sphincter. It is the only known remedy for the common cold. In large amounts it causes sleep.

White sleep. A waking sleep.
The pleasures of sleep with enough consciousness
to enjoy them.

Codeine is similar in its action to morphine, though less stimulating to the spinal chord, and less euphoric. It is a superior antitussive, as it depresses the coughing centers as much as morphine without the concomitant effect on the rest of the central nervous system. Almost all of the legal morphine harvested from poppies is converted into codeine. The inverse process is much more difficult.

Narcotine, like thebaine, accentuates respiration. It is also a mild analgesic and spinal stimulant. It is used medicinally for emphysema. Papaverine, present in the opium poppy in small amounts, is an antispasmodic, a smooth muscle relaxant, and a vasodilator. For these properties it has been used to treat impotence by direct injections into the penis. It's the *relaxation* of the muscles that causes erection, a reaction mediated by nitric oxide ions. My own suggestion is papaverine mixed with a little scopolamine, in a slippery oil, to be applied topically.

The study of opium led to the discovery of the first alkaloid. Likewise, the study of that alkaloid, morphine, has led to the discovery of the brain's own painkillers, the endorphins, perhaps the most important advance in neurochemistry of the past half century.

Endorphins are far more than painkillers; they are neurotransmitters mediating the processing of visual information as well as of emotional states and physical stress. The connection between endorphins and morphine is that they bind to the same receptor sites in the brain, and it was this similarity that led to the discovery of enkephalin by Hans Kosterlitz and John Hughes in 1975. Since that time other researchers have ascertained that there are at least a dozen endorphins in the brain, falling into three families: the enkephalins; the alpha-, beta-, and gamma-endorphin group; and the dynorphins. Moreover, there are at least three different kinds of receptor sites in the brain, each site showing preference toward one or more of the endorphin peptide families, although not to the complete exclusion of the other families. The resulting permutations and combinations form a highly complex web of interaction between sensory input and emotional/physiological response.

As an example, the mu receptors, those most attuned to opiate reception, are linked to analgesia, while the delta receptors, sensitive to opiates (and opiatelike endorphins to a lesser degree), are more involved with euphoria. And even with one type of receptor there are subtypes: one type of mu receptor governs analgesia, while another regulates the inhibition of breathing. This suggests the possibility of an "overdose-proof" painkiller – but so far no molecule has been discovered that will bind to only one of the two subtypes.

The Nature of Addiction

Endorphins present a physical analog to the spiritual laws of homeostasis and addiction. It is the principle of "no free lunch," perhaps best summarized by Lenny Bruce, who said:

> *You gotta pay dues.*

Or bills. The bills will wait for you on the desk, opened or unopened. In some cases the interest compounds. There are social dues and there are spiritual dues, there are mundane bills like the one from the gas company and esoteric bills such as the phantom afterimage left by a lost opportunity.

> *You gotta pay bills.*

On the physiological plane, addiction researchers have confirmed what Louis Lewin intuited half a century earlier.

> *It is conceivable that the impulse and the activity of regulating processes against foreign influences is enacted according to a scientific principle which has been termed by d'Alembert, Gauss, and later by Le Chatelier, the Law of Resistance to Constraint, and which applies to chemical and physical processes. It may be thus stated: If to a system in equilibrium a constraint be applied, a change takes place within the system tending to nullify the effect of the constraint and to restore the equilibrium.*
>
> *– Louis Lewin, Phantastica*

Precisely. In response to continued flooding of the endorphin receptors by opiates, the brain grows new receptor sites. Any reduction then in the amount of morphine leaves the brain in disequilibrium on the excess of pain side.

Lewin was careful not to be reductionist about the role of physiology in an individual's response to drugs, suggesting that every individual had a "toxic equation," in which temperament played a role along with heredity and other medically determinable factors. Reductionism is one of the dull poisons. Students of the Poison Path should give a great deal of consideration to the Law of Resistance to Constraint, and make it part of their ground state training.

The Plant

Sopha'd on silk, amid her charm built towers,
Her meads of asphodel, and amaranth bowers,
Where Sleep and Silence guard the soft abodes,
In sullen apathy Papaver nods . . .

– Erasmus Darwin, The Loves of the Plants

The opium poppy is named for sleep: Somnus is the Roman name for Hypnos, the god of sleep. Nyx, the goddess of night, carries poppies in her hand, while her son, Thanatos, death, wears a poppy garland. Hermes, the shaman god who travels between the worlds, carries a staff that brings sleep. His home was Mekone, "poppy town," the place where Prometheus stole fire.

lavender petals, red petals,
petals with a black splotch
near the claw

Poppies are annuals. There are dwarf species, but commonly poppies grow to four feet in height, and carry eight or ten flowers. Poppy flowers are red, white, lavender, and variegate. They are strikingly beautiful ornamentals, apart from their evocation of mystery. The buds are pendulous until they are ready to open, the stems bending over near the apex. As the buds open, the stem straightens and become erect. The purple petals, pressed upward by the expanding knob of the capsule, break through the sheaf straining around them and unfold.

it's like a glans
emerging from the prepuce.

The petals are soft and fine-textured. The ovary is surrounded by stamens, crowned by a disklike stigma.

one woman, many husbands

The number of stigmatic rays is important taxonomically, and also as an indicator of latex content and strength.

The Ally

The opium ally speaks, when she speaks at all, through dreams. There is clearly a linkage between the importance that the romantic poets placed on dreams, and their fascination with opium, though it is not clear which came first. In ancient times, the sick, visiting the Temple of Asclepius, were given poppy extract for just this reason – that they might receive a healing dream, a dream revealing the cause of their illness.

but you can get dream after dream,
until you begin dreaming the forgetting of dreams,
until the dreaming and the forgetting
become one act.

The trick is mastering nondisruptive questioning: being able to place the desired question at the head of the queue without disturbing the flow of images. The ally answers by creating a pictorial representation of the question. If you get a useful answer – something insightful that makes sense – the next problem is remembering it, to be able to return with the image to ordinary conciousness.

History Ancient, indeed. Poppies were collected, and probably cultivated, by the Neolithic Lake Dwellers in Europe. The poppy seems to have moved from Europe to the Mediterranean during the late Neolithic, following the tin and amber trade routes from Lithuania and Switzerland south through the passes across the Alps. During the Bronze Age and the Iron Age, the poppy made itself at home throughout the ancient world, both as a food plant and as a medicine. There is some evidence that the Sumerians called the poppy *hul-gil,* the "joy plant," though that claim is now disputed. By classical times, poppies were a part of the spring mysteries at Eleusis.

gold poppy capsule earrings,
a statue of a goddess, bare breasts,
her hands uplifted, three poppy capsules
growing up from her brow,
fine vertical scars, on each capsule

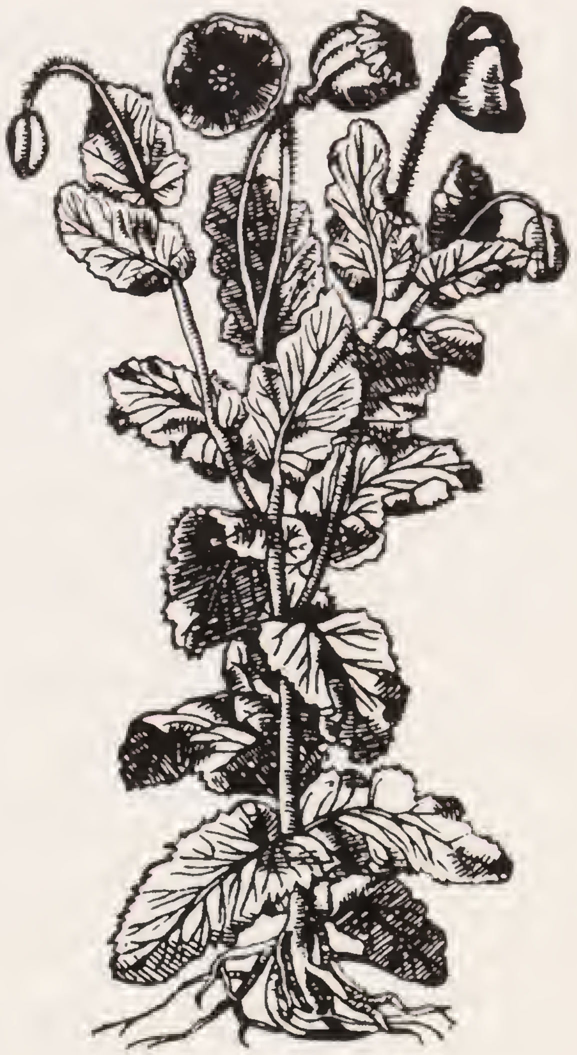
A statue of Asclepius depicts him holding a bunch of opium capsules in his hand. Opium poppies are on the backs of many ancient coins, both Roman and Jewish. Isis sometimes holds poppy heads. Demeter drank opium to ease her sorrows, and poppies are part of her worship.

bread and poppies

Helen learned the secret of nepenthe from the Egyptians. Thebes, in particular, was famous for its poppy fields. Nepenthe was probably a mixture, perhaps *mekonium* in wine, with mandrake and henbane. Tropanes go well with opium.

In the Middle Ages, opium came into Europe, as did most of Greek learning, through the Arabs. Jewish physicians traded with the Arabs and translated their books. But with the Black Death, in the fourteenth century, opium disappeared. Perhaps, being an Eastern medicine, it was suspect, since the plague had come from the East. It was our own esteemed Paracelsus, several centuries later, who reintroduced opium to Europe. Paracelsus claimed that laudanum was superior to all other medicines in warding off death, and is said to have made liberal use of the medicine himself.

Although opium has come to be associated with China, the poppy was unknown there until the Tang. In the Sung, poet Su Tung-Po praised its medicinal properties as a cure for diarrhea and for colds. The poppy was mostly grown in China as an ornamental flower until the nineteenth century, when the British, in an effort to correct a trade imbalance, began importing large quantities of opium into China from India. As recreational use of opium went against the grain of Chinese sensibilities, the government tried to stop the flow of the drug into their country. The British responded to this challenge with force, and the resulting conflicts were called the Opium Wars.



GARDEN POPPY (PAPAVER SOMNIFERUM), FROM MATTIOLI'S COMMENTAIRES, 1579

Poesis Poppies are beautiful and rewarding flowers to grow. They like rich soil, and it should be finely cultivated, though it is not necessary to cultivate deeply. Poppies like lots of sun, but not heat. They don't like fog or clouds. Mountains are ideal. They need water while they germinate and grow, less when they flower, and little or none as the capsules mature. Mediterranean climates will make them feel right at home.

Most people do not realize that the poppy seeds in their pastries are opium poppy seeds, and will, indeed, show up as opiate-positive in drug tests. This is more due to the extreme sensitivity of the drug-testing technology than to any psychoactive properties of the poppy seeds. Or so it is said.

It is also said that there is wide variation in alkaloidal content between poppy strains grown for seed and strains grown for drugs. But is there really? Evidence is contradictory.

As the worldwide persecution of the opium plant continues into the twenty-first century, government genetic engineers may succeed in disabling the alkaloidal genes in the DNA of *Papaver somniferum,* but such is not the case today.

When you have broken up, raked, and smoothed out your beds, scatter the seeds, then lightly rake or broom the soil so that the seeds are just covered. Water with a sprinkler head, so that the soil is not unduly disrupted, and don't allow the ground to dry out while the seeds are germinating. If the weather is warm, the seeds should germinate in one or two weeks.

Abseits im Garten blüt der böse Schlaf.

Apart in the garden blooms the angry sleep.
– Rainer Maria Rilke

As the seedlings begin to crowd each other, thin them out to eighteen to twenty-four inches. I've seen them grown closer than that, but many of the plants were undersized and had small capsules. The seedlings look a little like lettuce, and you can eat some of the plants you pull in salads. The greens carry some of the characteristic poppy taste, but contain few if any alkaloids.

The rate of growth seems to depend on the light and temperature. Early poppies hold back and wait for the warm weather to really grow. Still, in many climates, two crops a year ought to be possible. In India, where the growing season is limited by winter at one end and by the monsoons at the other, the sowing is set to a particular week in November. The seedlings can overwinter under a light cover of snow and then have a head start into spring.

Many studies have reported that manuring and giving extra phosphorus and nitrogen increase the quality and quantity of latex substantially, up to a certain maximum.

Much of the best research comes from India. Indian chemists and agronomists have studied all aspects of opium poppy agriculture: effects of fertilizers, harvesting techniques, when to plant, selective breeding, all in terms of yield per hectare, or percent alkaloid per plant, or morphine/codeine/narcotine ratio.

Phosphorus seems to be most important during the initial stages of growth, and the nitrogen later. Manure is always good. The professionals treat the seeds with a fungicide before they sow them, and weed the rows conscientiously throughout the growing season.

The plants begin to flower in about three months. Opium poppies come in many colors, despite the popular belief that all true opium poppies are white. The red-flowered poppies are spectacular, and there is a deep lavender poppy that is exquisitely beautiful. The flowers are ephemeral,

they are studies in impermanence . . .

the petals falling a day or two after their emergence.

itself a study of metamorphosis, like a butterfly
breaking out of its chrysalis,
and letting her wings dry in the sun.

The fallen petals are wonderfully edible and are a beautiful addition to any salad. After the petals fall, the capsule grows quickly for several days, and then ripens and matures for several weeks. About two weeks after eating opium-flower salads, if you live somewhere in the world where the State has not assumed stewardship for your spiritual temptations, you are ready to begin the harvest.

Many studies have been done to determine the optimal time to lance the capsules. One pamphlet I saw stated that the capsules could be lanced as early as five days after petals have fallen, but the scientific studies disagree. While the latex may indeed be thick enough for lancing at that point, the morphine content of the latex has not reached its maximum until about fourteen days after the petals fall. Moreover, an Indian agronomical study has shown that the morphine content does not, as was previously believed, decline after a certain critical time. In fact, dried poppy heads are still loaded with morphine, codeine, narcotine, papaverine, thebaine, and all the rest.

It *has* been shown that when the latex is exposed to the light and the air, some of the morphine degrades into codeine. The scientist V.S. Ramanathan (1980) suggested that the latex be sprayed with an antioxidant solution of salt and ascorbic acid, or that the latex be collected immediately, instead of being allowed to congeal and dry, as is traditional.

> *I read about a poppy farmer who would lick the fresh latex right off the capsules. And the image has stayed with me: a man looking like Blake's painting of Nebuchadnezzar, on his hands and knees, licking poppy capsules, a couple of long-haired cats, their tails wrapped about them, sitting nearby in the dirt and watching . . .*

But a few more words on lancing. The morphine is produced in lactifers in the wall of the capsule, the last step in a long process of biosynthesis (the penultimate substance being codeine). Opium, as such, is prepared directly from the latex, the collecting of which is a labor-intensive process.

To cut an opium poppy capsule is to enter mythic time, to share in a tradition stretching unbroken into prehistory and to let the ancient tradition enter history again at the moment of the millennium.

Ritual. Long memories,
houses built on poles,
mountains, glaciers, trading parties
of tattooed men and women, faience beads,
packs filled with poppies, tin, and amber,
threading through a pass.
Hammered bronze knives, Helen,
mixing her potions,
the blue Aegean stretching
like a storyteller's breath.

While controlled studies indicate that the best time for harvesting is fourteen to twenty days after flowering, in practice, in the field, the timing can only be approximately measured by a calendar, since the maturation of the plants is not uniform. Harvesters learn to judge the maturity of the capsules by their compactness and color, the change from green to whitish green being the signal. Unfortunately, not every capsule undergoes the same color change, as the size of the capsule also affects the change. Harvesters also judge by the firmness of the capsule.

Professional farmers in Asia and the Middle East sometimes have three little blades set into a ring that is worn on the finger for lancing. Others just use a sharp sickle-shaped knife. A razor blade works great, wrapped with masking tape so that only a millimeter or less of the corner of the blade is exposed, the layers of tape forming a shoulder to prevent the blade from cutting deeper.

like circumcision,
carefully cutting
just the outer skin

drops of semen, glowing
white in the sun

If you cut completely through the pericarp, the latex is lost inside the capsule, and it spoils the seeds. Several different methods of lancing are used in different parts of the world: a single vertical incision, multiple vertical incisions, multiple horizontal incisions, multiple slanted incisions, and the Turkish spiral cut. One Indian team found that the Turkish spiral cut was the best, while another team found that the single incision did just as well.

Turkey, young men in turbans
in the chest-high fields.
China. Ripe poppies
in the mountains of Laos.

But some things are clear from both studies: that long cuts diminish the morphine content of secondary and tertiary lancings. This indicates that if you live in a part of the world where you are free to harvest your poppies as you see fit, consider making your incisions only one-third the length of the capsule, vertical – one or two incisions only – and then repeating this process every two or three days until the capsule no longer exudes latex. Lance on opposite sides of the capsule each time.

the fresh latex is acrid

On the other hand, if you cannot indulge in such freedom, and can only afford one lancing, make your cuts longer, either the spiral cut or several vertical cuts on both sides of the capsule.

the taste of opium becomes so delicious
that one salivates
drawing in the smoke

It is generally accepted that it is important to collect the latex before 8:00 AM. Usually the lancing is done in the late afternoon or early evening, and the collecting done early the next morning. The latex, which is white when it first appears, dries and darkens fairly quickly. It is collected by scraping it off the capsule with a dull knife or some other scraper.

You have to scrape a lot of poppies
to get a little bit of opium.

You need a scraping device, and a collecting cup. There is a knack involved, better learned from experience than from text.

Learn from the man on his hands and knees, browsing
around the poppy patch.

A paring knife is a good tool.

The Ally

More like a white-haired phantom,
half man, half ghost,
lingering on and on
in the twilight of desire.

What alcohol has been to twentieth-century literature, opium was to the nineteenth-century Romantics. They followed the dreamer's way – and the dreaming path led through the poppies. None of them smoked opium. They took laudanum.

For not to think of what I needs must feel,
But to be still and patient all I can;
And haply by abstruse research to steal
From my own nature all of the natural man –

This was my sole resource, my only plan:
Till that which suits a part infects the whole,
And now is almost grown the habit of my soul.

– Samuel Taylor Coleridge, "Dejection: An Ode"

Thomas De Quincey's name has become synonymous with opium because of *Confessions of an English Opium Eater.* De Quincey brought "opium eating" into public consciousness. De Quincey was the first "out-of-the-closet" laudanum drinker from the genteel classes. (The working class often used laudanum because they couldn't afford beer.)

Coleridge accused De Quincey of taking opium for pleasure, while stating that he himself only took it for medicinal purposes, implying some moral superiority thereby. The accusation seemed to bore De Quincey more than it shamed him. Interestingly, it was De Quincey who was better able to control his habit. After some years of taking a pint or more a day of laudanum, De Quincey gradually tapered himself off to a mere spoonful or two a day, and seemed quite satisfied with that. Coleridge drank about two pints a day for most of his life, his frequent attempts to break his addiction complete failures.

Alethea Hayter in *Opium and the Romantic Imagination* refers to John Keats as a writer who used opium only occasionally. Recently, however, a test was made of a lock of the poet's hair, and the test results indicated chronic use of opiates.

George Crabbe, the poet and clergyman, used laudanum regularly, without deleterious effect on his poetry, day job, or family life. Elizabeth Barrett Browning took morphine in ether for her nerves, and became addicted. She kicked when she married Robert Browning, and was drug-free when she birthed their daughter, but probably relapsed after that.

Some, like Walter Scott, who used opium as a medicine for digestive problems, were able to quit whenever their physical ailments permitted. Southey, Shelley, and Byron used laudanum whenever they felt they needed it, and were able to put it down when the need passed.

Wilkie Collins was a laudanum addict, as was Baudelaire. Many plant allies passed through Baudelaire's life, including, as we have noted, absinthe. But opium got him at the end. Whether or not Edgar Allen Poe was a laudanum addict is still a matter of academic debate.

The Plant

I first smoked opium out of a baby bottle. A tiny hole had been drilled in one side of the bottle. The host had a little ball of opium on the end of a bicycle spoke, and twirled it over a candle until it was soft. The side of the bottle was being heated also. There was a rubber stopper in the bottle and a glass drinking tube in the stopper. As the host pulled the bottle over the candle, he pushed the little ball of opium into the hole, and told me to suck. White fumes filled the bottle and entered my lungs. I smoked several balls. It came on slowly and built for hours.

> *That's the way the bosses did it. The soldiers didn't have time for that kind of thing. They took the fast stuff, the stuff you could shoot through your arm.*

In India, you buy smoking opium in little cups. Maybe there are four or six hits in a cup, and maybe you will stay and smoke several cups. You get a bunk and a headrest, and the proprietor who prepares the pipes.

The most common mistake of untutored smokers is to try to burn the opium the way hashish is burned. With opium the object is vaporization rather than combustion, and even with the best technique a lot of opium is destroyed by heat.

But opium is lost by digestion also. And if the opium is eaten, the effects are more diffuse. (Cocteau maintained that the two practices of eating and smoking were not the same at all, and attracted different sorts of people, but it is hard to guess what he was referring to.)

The Path While there is probable evidence of ritualistic use of the poppy in the Eleusinian mysteries, the predominant use of the poppy through history, drug-wise, is as a medicine. There is nothing antisocial, intrinsically, about most plant allies, such as *Cannabis* or alcohol or *Coffea,* but the same cannot be said for *Papaver. Papaver* has antisocial tendencies, at least when the acquaintanceship becomes a full-fledged affair. In Cocteau's words, "Two on a pipe is already crowded."

> *Opium likes to associate with itself.*

Spiritual masters are sought out by seekers of truth. The opium smoker is mostly sought out by domesticated cats, seekers of a warm body upon which they can walk about, stretch out as they please, and nap: purring and secure.

The Ally

> *Opium knows how to wait.*
>
> *– Jean Cocteau: Opium Diary of a Cure*

Effects

a sudden wave of nausea, I wonder briefly
if I will need to vomit.
then comes the thirst,
the long thirst that water doesn't seem to quench.
and itching. I scratch my beard
scratch my legs. my balls itch.
one hand spends a lot of time
inside my pants.

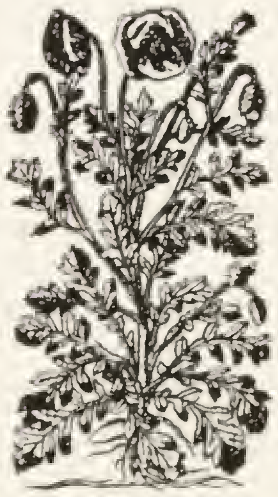
and I saw the visions: the damsel with the dulcimer,
some beautiful, some scary, some obviously symbolic,
like kissing a woman and her mouth suddenly becoming
"dry paraphernalia," hard and angular, stuck
in my mouth.
other:
a woman suddenly strips naked, and all so
immediate: color, texture, odors,
lucid.
always knew I was dreaming, but didn't always
know whether my reflections upon the dreams
were waking, or dreams themselves.

all my ideas became visual, structural ideas for
the book, all took visual form.

but not all pleasant. the punishing visions get
their turn . . .

CORRESPONDENCES

IMAGE	The Keys
LANDSCAPE	Large River
LOGICAL OPERATOR	Not
METAL	Lead
METAPHOR	Dream
MINERAL	Olivine
MUSICAL INSTRUMENT	Lyre
MYTH	Oedipus
MYTHIC HERO	Adonis/Narcissus
NUMBER	$\sqrt{-1}$, imaginary numbers, i
OCCUPATION	Physician, Coolie
OUT-OF-BODY REALM	Realm of Equanimity
PERIODIC TABLE COLUMN	Noble Gases
PHASE OF COITUS	Postorgasmic
PHASE OF MATTER	Amorphous
PHYSICAL CONSTANT	Permittivity of Free Space, ε_0
PLANET	Saturn
PLATONIC SOLID	Dodecahedron, the Knowledge Body
POISON	Fear, Inadequacy
PROPORTION	ϕ, Golden Mean
QUARK	Bottom



CORN POPPY (PAPAVER RHOES), FROM MATTIOLI'S COMMENTAIRES, 1579

Effects

> *The effectiveness of opium is the result of a pact.*
>
> *– Jean Cocteau, Opium: Diary of a Cure*

CORRESPONDENCES

QUANTUM FORCE	Neutron
REALM OF PLEASURE	Spinal Cord
RITUAL EVENT	Love Affair
ROCK	Schist
SEASON	Spring
SENSE	Smell
SEXUAL POSITION	Woman on Top
SIGN	Cygnus
SIN	Sloth
SOCIAL EVENT	Convalescence
TAROT KEY	Hanged Man
TIME OF DAY	Twilight
TOOL	Athanor, Nail
VIRTUE	Hope
VOWEL	Middle Central: ə

Poesis When the plants dry out, collect the seeds. In some races the valves at the top of the capsule open, and it is like a shaker. In some races of poppy, the valves never open, and you have to slit the capsule to get the seeds. Dry the seeds and they will keep well, for sowing the next crop and for food.

After harvesting the seeds the plant can be harvested for "straw." The leaves make a pleasant tea, but the capsules themselves are rich enough in alkaloids, even after lancing, that they have become a major source of opiates, commercially.

Extraction processes can be divided into aqueous methods and solvent-based techniques. Methods of collecting the alkaloids from "poppy straw" are slightly different from the methods of separating the morphine from opium. For the latter, in the fields of Southeast Asia and in the Middle East, the method is to dissolve the opium in hot water (not boiling), and to precipitate the narcotine and codeine and other organic parts by adding lime (calcium oxide, CaO). Because of its phenolic structure, morphine is an exception to the general rule that alkaloids are insoluble in basic solutions. The solution is filtered, and the filtrate is heated and stirred again, and the morphine dropped out with concentrated ammonia, NH_4OH, and recovered by another filtration.

Opium alkaloids are extracted from poppy straw with a 5 percent sodium sulphate solution, in a series of extractors. The solution is neutralized and concentrated, the concentrate then repeatedly extracted with 90 percent ethanol. The alcoholic layer contains all the alkaloids, which can be recovered by distillation.

There are a large number of patents for processes to separate the various opium alkaloids. The oldest is the Gregory process, where a concentrated aqueous solution of the opium is treated with calcium chloride, which precipitates the narcotine, and most of the nonalkaloidal organic compounds: calcium meconate, calcium lactate, and calcium sulphate. The filtrate contains morphine and codeine hydrochlorides. This is crude "Gregory salts." They can be redissolved, and the morphine precipitated with ammonia.

Solvent-based extractions of poppy straw on a small scale would follow other alkaloidal extraction techniques.

The Nature of Addiction

The pipe becomes the ally,
the ally becomes a crutch,
the crutch becomes a habit.

Effects

Narcotics are not generally thought of as sexual enhancers. In fact, the contrary is usually the case: the eidetic upstaging the carnal. But with opium, *if you ever get around to it,* sexual orgasm can touch astonishingly primal centers. Perhaps part of it is a side effect of the general decrease in sensitivity, delaying the orgasm and demanding a prolonged and more insistent intercourse – but when the climax is at last achieved, it seems to split the spine. In an instant one knows what lizards feel when they mate, and why they clamber onto a sun-warmed rock in the morning. One feels kinship with amphibian consciousness, you know for yourself what frogs' legs do when they stop jerking. One even knows, and for an instant must acknowledge, a power greater than the poppy – and this is a knowledge worth remembering. For if the poppy ever succeeds in sucking out your soul, in having you serve her instead of her, as before, leisurely caressing your hair with her soft fingers, you will need the memory of that glimpse of light. You will need to know that somewhere raw life exists, that it lives in seemingly imperfect and ephemeral bodies, but that in mundane flesh the universe has triumphed. Without that knowledge, your chances aren't worth a long shot at the dog races.

Beautiful mistress
When I inhale your dark perfume
My deepest longings for love
Are touched and soothed.

HEROIN AND THE NATURE OF ADDICTION

Mornings,
teaspoons,
Richard Farina . . .

With heroin, the nature of addiction can be drawn out to a fine point.

Addiction has become so synonymous with heroin that dependency on nicotine or alcohol is more often thought of as a *habit* rather than as an addiction. This despite the fact that a heroin addict has a better chance of beating his habit than does a smoker.

Heroin is diacetyl morphine. It is prepared from morphine in a fairly simple reaction, using acetic anhydride or acetyl chloride. When it was first synthesized, heroin was believed to be a superior painkiller to morphine (true), without the habituating properties (false). Heroin was even sold as a cure for morphine addiction, and in this it was certainly successful, if substituting one addiction for another can be called a cure. Though, inasmuch as methadone is called a cure for heroin addiction, heroin's claim as a cure of morphine addiction surely stands. Junkies say that methadone is more painful and difficult to kick than is heroin.

Smack. Stuff. Heavy.
Horse. H.

The addictiveness of opiates (the length of time necessary to acquire the addiction) seems to vary directly with the immediacy of the effects, while the strength (the persistence of the addiction) varies inversely. Intravenous morphine is much more addictive than is opium, and opium smoked is more addictive than is opium ingested. But an opium-eating habit is reportedly harder to kick than an opium-smoking habit, other variables, such as length of addiction, being constant. Heroin, which is shorter-acting than morphine, is more addictive. Opium addicts do not necessarily have to keep increasing their dosage, as is more commonly the case with heroin addicts.

Even with heroin, however, it is possible to avoid the build-up of tolerance. Experienced addicts will often take minimal doses, the minimal dose that relieves the craving. What builds tolerance is always going for the same rush experienced as a beginner. Either way, though, you've got a monkey.

Men lies about it,
Some of them cries about it,
Some of them dies about it,
Ev'rything fight about a spoonful,
That spoon, that spoon, that spoonful.

– Willie Dixon

Thanks to misguided drug laws, while opium is almost impossible to obtain in the United States, heroin is readily available to anyone with money, determination, and a modicum of street savvy.

Effects

Itching, coasting, soap-boxing, sweating, nodding.
Dry mouth, dry ass, blind eyes.

Even the itching becomes a craving.

Narcomania

Intent is involved in addiction. Not that many junkies started out by one day thinking, "Gee, I think I'll become a heroin addict." In fact, those who start that way ("I just wanted to see what it was like to be an addict") seem able to kick and leave the stuff with the same nonchalance as they began.

The importance of intent has to do with the nature of the dis-ease being treated: whether the intent is to relieve physical pain from a specific organic ailment, or whether the intent is to relieve spiritual pain. If it is a physical pain that is being treated, when the cause of the physical pain is gone, you can stop taking the medicine with no or few untoward effects. If the pain is spiritual, the matter is more complicated.

If the spiritual pain is caused by some particular environmental malady, such as being in a combat zone in Vietnam, the cause of the pain will disappear when you finish your tour of duty. Most of the vets who returned to the United States as addicts gave up their habits when they gave up their rifles.

But if the spiritual pain is from within yourself, how will you ever escape? And there is a particularly pernicious feedback loop in narcomania: the presence of the ally in your body impedes the very spiritual work needed to relieve the pressure, and so the pressure increases.

Three headings define the vicious state of Samsara:
The misery of conditioned existence,
The misery of change and
The misery of misery.

Should we try to illustrate this triad of misery by similes, that of conditioned existence would be like an unripe fruit; that of change would resemble a meal of rice gruel mixed with poison; and the misery of misery would be like the growth of mold on fruit. Or again, the first is a general feeling of indifference, the second a feeling of pleasure, and the third of displeasure.

– Gampopa, The Jewel Ornament of Liberation

Effects Susan Lydon, who writes about her fifteen years of heroin addiction and eventual recovery in *Take the Long Way Home,* says that it wasn't that heroin got her high, but that it made her feel "like an ordinary person." At first.

If you don't feel like a normal person until you snort H this is a sign that – well, a bad sign. A sign that you must avoid it, immediately; that the prognosis of your relationship with this particular ally is poor.

Such people should take Prozac, not heroin.

Narcomania The pain of creation, the birthing pain. Relieve it at your peril. H is constipating.

Still, some do. Some do and still triumph. Bird. Trane. But neither of them ever claimed that the stuff helped them.

> *They love not poison that do poison need.*
>
> *– William Shakespeare, Richard II*

Maybe it happens that you've been using the stuff off and on, kind of for fun, and that you feel really terrible today. You have a runny nose, don't feel much like eating or going out. Then you realize that you don't have a cold. And you go score.

After that is the "honeymoon" period. How long it lasts and how much of a honeymoon it is depends on the legal status of the drugs in question, and on your "luck." Medical doctors, who are overrepresented statistically among narcotic addicts, can often maintain themselves for many years, if not for their whole career. If they inject they use clean equipment. They get proper nutrition, supplementing it where necessary. And they don't have to spend half of each day trying to score.

The (dull) honeymoon can last months, years, or decades. After that comes the late chronic stage, during which the principal motive is simply maintenance, avoiding withdrawal. When problems set in, the final stage appears: deterioration or recovery, whichever. That problems will set in is certain, even in the best of circumstances. It's a corollary of the laws of spiritual physics. "He not busy being born is busy dying," as Bob Dylan put it.

The Kicks

> *I started sniffing stuff on the road and I ran out. I got totally depressed and my stomach hurt. My nose hurt something awful, terrible headaches; my nose started bleeding. I was getting chills. I was vomiting. And the joints in my legs hurt.*
>
> *– Art Pepper, Straight Life*

John Lennon wrote a song called "Cold Turkey" containing many images of heroin withdrawal: the aching body, the sleeplessness.

> *But not everyone survived. Accidental overdoses: Carl Perkins, Phil Seaman, Tim Hardin, Mike Bloomfield. Mistaking pure heroin for cocaine: Tim Buckley. Combining H with barbituates, alcohol, stimulants and tranquilizers: Janis Joplin, Gram Parsons, River Phoenix.*

The Ally Hiding it. Keeping it private, not telling the spouse. And they feel betrayed when they find out, like with an affair. It *is* an affair, an affair with a pipe, an affair with a syringe. Most masturbation is a private kind of thing.

Narcomania Nonaddictive use of narcotics has been difficult to study. The draconian laws and the social stigmas connected with any nonmedical use of opiates has forced the occasional user to be completely secretive. The anecdotal evidence and what stories are available to us reveal that some "chippers" last for decades before becoming addicted, and that some never become addicted.

Cocteau distinguishes between habit and addiction: smoking opium every Sunday is a habit; having a ruined liver is a sign of addiction.

The Ally It's easy to get romantic here: Burroughs was a master of that, and Algren. There is already enough glamour about "God's own medicine" without my adding to it.

> *Things kept getting worse. I got busted. All my deals started falling through. And the worse it got, the more I needed my fix to take away the pain, to keep from having to face the music. The mail and the bills just kept piling up. I didn't even notice. Some thugs came over and pistol-whipped me and ripped off most of my stash. I wanted to kill them and was going to put out a contract. I hired some Hells Angels to come with me and we went after them. Things were* SO BAD.
>
> *Then through the fog of the narcosis it occurred to me that the heroin might be affecting my luck.*

The Kicks "Like having the flu," someone said. No, worse than that, much worse. Not that the flu is to be taken lightly.

> *Tremors. Sweats. Your whole body aching.*

But what is worse is the mental pain, and having to face the ruins of your life, what's left of it. Maybe things weren't great when you started, but they are much worse now.

> *My best friend got strung out and started stealing from me. He'd actually burgle the house. He stole from all of us. One time we had to call the police.*

Seeking oblivion, we awaken in the Abyss. Hung over, craving, out of money, out of friends.

> *That's right, it's come to this,*
> *It's come to this,*
> *And wasn't it a long way down?*
> *Wasn't it a strange way down?*
>
> *– Leonard Cohen, "Dress Rehearsal Rag"*

Narcomania In Laos, among the Lao and the Hmong, smoking opium is not stigmatized, it confers no special status upon a person. Addiction to the point of impairment, however, does. The situation is precisely analogous to drinking in the West: moderate drinking is neither good nor bad, but alcoholism is seen as a defect of character and a serious liability. Thus life in the Laotian mountains provides an example of a culture where the use of opium is "socialized."

In Laotian villages that are actually growing and producing opium, up to 10 percent of the population may be opium addicts. In cities where opium is widely traded, but its presence is less pervasive, the addiction rate is around 5 percent. In villages near the opium fields, but which are not actually growing poppies, the addiction rate is 1 to 2 percent.

These figures suggest that even in villages where opium is an everyday part of life the addiction rate is roughly the same as the rate of alcoholism in the West. This lends some credence to the theory that the proportion of addicts in a society is a constant, that it is only the object of addiction that varies.

When, under pressure from the United States, the Laotian government outlawed opium, traffic in heroin increased tremendously, and heroin addiction began replacing opium addiction. We should note that the number of alcoholics in Laos is small, and that alcoholism occurs where there is the least amount of opium addiction. If we in the United States could switch our heroin addicts onto

HELP YOUR LOCAL JUNKIE
KICK

MICHAEL MYERS

alcohol, and our alcoholics onto heroin, the savings in medical and social costs to the country would pay for a sizeable portion of national health care.

The Ally Like Mayakovsky, we play Russian roulette. That is why luck is so vitally important.

The Kicks There comes a time when it's all over but the crying. Mostly after five or eight years, maybe ten, junkies get tired of the life. A few exceptional dope fiends hang in there for fifteen years and attain some notoriety in those circles. But there is nothing comparable in the narcotics world to the smoker who has had one lung removed but still can't/won't quit smoking.

A pervasive sadness, memories of a happier life.

Memories of a life that was simpler and warmer, when you had friends who weren't junkies. When your family still trusted you. When you could hold a job. When you were in love, and were loved in return, and with good reason. When your dreams were what you were living for, rather than in.

Ending even the worst marriage is painful.

When you look through the years
and see what you could have been,
oh what you might have been,
if you'd had more time.

Who's to blame if you're not around?
You took the long way home.
You took the long way home.

– Supertramp, "Take the Long Way Home"

The Ally One of the beautiful things in the world is a dope fiend getting straight. They have a special radiance. Narcotics Anonymous meetings overflow with warm feelings of love and support, and that in itself is enough reason to visit one. "Recovery doesn't happen in isolation," they say. No, but vision quest does. And vision is what you are going to need.

Love, a relationship, a good job, friends, all those things we call "merit" or "good karma," are part of your medicine, part of your power. You are going to need them all, but you are going to need more.

It is hard to know that this magic carpet exists and that one will no longer fly on it.

– Jean Cocteau

The *poison doctor* calls upon all of his medicines and uses poisons to fight poisons. Here we part company with Twelve Step approaches. Nothing against abstinence; "whatever works," we say. But most *poisoners* would prefer to give up the identity of "being an addict" without taking on the new one of "being in recovery." We wish to maintain and continue the recovery that led us to poisons in the first place.

Still, if your solar medicine fails, all bets are off.

Narcomania

Got the blues in my coffee, got the blues in my head,
if I die in the gutter, God almighty now,
at least I'd be dead.

I don't like living, but I don't want to die,
Cause if I was dead, God almighty now,
well I'd miss getting high.
– Patrick Sky, "Nectar of God"

The Kicks

Clonidine is said to depress the locus coeruleus in the brain stem, thought to be the "fear center," and should certainly be investigated for relief during the initial period of withdrawal.

Recently, ibogaine has been found to be effective during withdrawal. The claims for ibogaine sound much like the claims that were made thirty years ago for LSD, and probably for as good a reason. Withdrawal is bounded, is finite. It's hell, but the days are numbered. It's after the withdrawal, when you reemerge into the world, that you need power.

Power comes from vision, and vision comes from the allies, particularly the *phantastica*. Some *poisoners* use LSD right during withdrawal, to go into it further, to look for something in the smoky hell that is familiar – a poison, a passion once loved and cultivated, but cast aside. You search to find your old ally and to make amends.

You may need to change your environment. If all of your friends are junkies you have to move. A few members of our beloved poison clan have proved exceptions to this rule, but how many of us can pull off what the magicians do? Your ally will tell you.

The Ally

Having kicked one addiction does not make you immune. In fact, if you fall again you will be worse off than before. Every magician can survive one bottoming out, by definition. Don't tempt the Fates.

> *A man who, after having long been in the power of opium or hashish, has succeeded, despite his enfeeblement by the habit of slavery, in mustering the necessary energy for his deliverance, seems to me like an escaped prisoner. He inspires me with more admiration than the prudent man who has never lapsed, having always been careful to avoid temptation.*
>
> *– Charles Baudelaire, The Poem of Hashish*

Truly poisonous words.

THE PERFUME OF POISON

The arrowhead is avoidance: sloth, greed, and their friends mere hangers-on. Something must be risked.

> *The first poisons were love philtres, potions*
> *to ensnare the heart.*

Other seductions came later: knowledge, the Elixir of Life.

> *Adam was already in love. One led to the other.*

Poisons for commerce are recent. Royal coca fed to workers by the conqueror. *Excitantia.* Armies goose-stepping to reduced ephedrine. Coffee breaks.

> *The poison is the veneer.*

An aroma, a spice. Makeup. *Pharmaka.* Empedocles: the deceiving poison of appearances. Gaudy colors and flashing lights, merely the most obvious.

The technician fashions gods. Poems. A vision of a world. And we walk through it, calling and singing, working, raising children.

> *I conjure you, my brethren, remain true to the earth, and believe not those who speak unto you of superearthly hopes! Poisoners are they, whether they know it or not.*
>
> *– Nietzsche, Thus Spake Zarathustra*

The craving for immortality is the primal poison, and the original sin. Thus we fell from paradise, grasping for the permanent and seeking the undying. The wish to be like gods oozes toward us.

> *Sweet, sweet, sweet poison for the age's tooth.*
>
> *– Shakespeare, King John*

Poisoner, wizard, benefactor.

PIPER METHYSTICUM

Common Names Kava kava, *'awa.* And over a thousand other names. Most kava people have distinct names for each of the many varieties of kava that they grow, usually fifty or more. Figure that there are three hundred languages in Indonesian New Guinea alone, and at least that many in the rest of Melanesia, and scores more in Micronesia and Polynesia. Just multiply fifty by five hundred.

Related Species *Piper betle,* the leaf used to wrap betel nut; *Piper nigrum,* black pepper; *Piper cubeba,* cubeb.

Taxonomy The pepper family, Piperaceae. Pantropical: small trees, woody shrubs, and herbs, mostly in rain forests. Black pepper has been a major cargo and motivator of the spice trade for at least three thousand years.

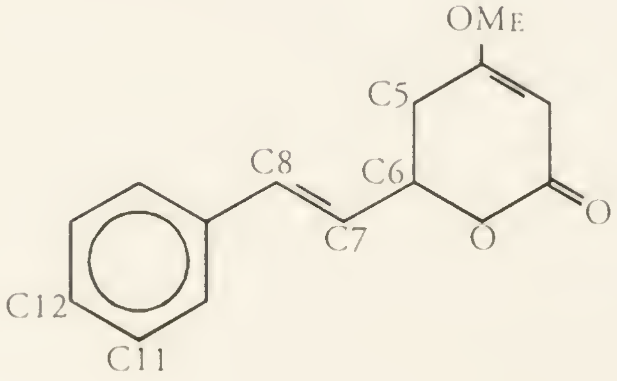
Part Used The ground rootstock.

Chemistry Details of the chemistry of the active constituents of kava have recently been explored by Lebot and Lévesque. They divide the active ingredients into two groups that they call the "major kavalactones" and the "minor kavalactones." The major kavalactones account for 96 percent of the total lipids, and Lebot and Lévesque believe they fully determine the wide spectrum of effects experienced from ingestion of various kavas.

The six major kavalactones are

1. demethoxy-yangolin (DMY);
2. dihydrokavain (DHK);
3. yangonin (Y);
4. kavain (K);
5. dihydromethysticin (DHM);
6. methysticin (M).

Kavalactones are sesquiterpenes. They have a phenol ring connected to a saturated δ-lactone six-atom ring through two intermediary carbons with or without a double bond. Kavain is



with a double bond between C7-C8. Substitutions on the phenol ring, mostly methoxy groups, and the shifting double bond between C7-C8 and C5-C6 account for most of the kavalactones. In methysticin, a methoxy group joins together with a hydroxyl group to make an O-CH2O bridge between C11 and C12.

Lebot and Lévesque analyzed cultivated varieties of kava from throughout Oceania, and discovered that they could classify the many chemotypes by coding the relative abundance of each of the six major kavalactones. For example, chemotype 521634 contains primarily (5) DHM; (2) DHK; and (1) DMY, in that order, the other three lactones present in smaller quantities. Further, they found that each chemotype, or chemo-genus, determined by the three most abundant kavalactones, produced physiological effects distinct from the other chemotypes. Combining the relative abundances of the chemotype code with absolute content percentages, the authors were able to map the history of the domestication and differentiation of the various chemical races of the kava plant. Their research showed that the evolution of *Piper methysticum* has been guided not by a struggle for existence but by human beings seeking distinct highs from the effects of eating the rootstocks.

Not surprisingly, the plant people with whom these admirable scientists studied already had names for the different chemotypes, recognized them, used some for ceremonial occasions, others for medicinal purposes, and others for everyday drinking. And they cloned and traded them.

Effects Serenity, well-being. Kava is an emotional leveler. It relieves fatigue and is mildly stimulating mentally. In moderate doses kava is a muscle relaxant, especially for the lower body. In larger doses kava is a soporific, but without dulling the consciousness. Half a coconut shell of strong kava will put a drinker to sleep within half an hour.

> *Where can you get a better night's sleep than with kava?*

Kava drinkers prefer softened light and quiet. Mellowness.

The Ally A doctor of our path could base her whole practice on kava, swimming with energies of the heart, adjusting, finding words, seeking the common ground, sharing and bringing together. Common ground like a warm breeze,

> *trade winds, turquoise water,*
> *a sunken tank rusting on a coral reef.*

The Plant *Piper methysticum* is derived from a wild plant still found in Melanesia, *Piper wichmannii*. Kava is a sterile cultivar, and was domesticated by vegetative propagation from a limited genetic base of *Piper wichmannii*, probably on Vanuatu. Lebot, Merlin, and Lindstrom, in *Kava, the Pacific Drug*, write that the domestication probably is only 3,000 or 3,500 years old, and present both chromosomal and linguistic evidence to support their thesis.

Piper wichmannii has the chemotype code 521634, nearly opposite of the chemotype of the most sought-after variety of kava, 426135. The process of breeding this variety would necessitate detecting the difference between 521634 and 521643 in one's garden, and then cloning off of 521643 for another garden. And perhaps in the new garden finding, purely by subjective effects, a clone that has mutated to 526341, and then cloning yet another garden from that plant. And so on.

Mathematically, the number of codable chemotypes by Lebot's system is $P\left(\begin{smallmatrix}6\\6\end{smallmatrix}\right) = 6! = 720$. Actually, there is very little difference between clones varying only in the minority lactones – the first three components tend to typify a class. That would be $P\left(\begin{smallmatrix}6\\3\end{smallmatrix}\right) = 120$. Representatives of many, if not most, of these intermediates still exist and are still cultivated. Such an accomplishment in a few millennia of clonal selection bespeaks the skill and sensitivity of the Pacific Islanders as plant doctors.

Chemistry Kava people consider plant varieties with a high percentage of K, kavain, and a low percentage of DHM, dihydromethysticin, to induce the most desirable psychoactive effects. Plants that are high in DHM are usually avoided, as the effects are said to be long-lasting and to cause nausea. All six of the major kavalactones are psychoactive, and all six differ in their psychoactive properties and also in their pharmacokinetics, the speed of the onset of effects and the duration of the effects. Moreover, it is likely that the effects of the various kavalactones are synergistic, adding even more complexity to the various properties of the many cultivated varieties of *Piper methysticum.*

The Ally Used for camaraderie, and for divination. Used to find words, to find a song, or to get advice. The seeker retires to a quiet place and drinks kava. Then listens. Maybe the words will come from a bird, maybe the words will come from the trades in the palm branches. Sometimes the words will come from your ancestors. For that reason kava is often drunk in burial grounds.

How Taken Traditionally, the fresh root is chewed for five or ten minutes to soften and separate the fibers. The whole mass is spat out onto some leaves, and more root is chewed. This is usually done in a group. In the past,on some islands, such as Samoa, this task had to be performed by a bare-breasted virgin girl, bedecked with flowers and sitting cross-legged on a mat.

Mostly though, what has always been sought are strong young jaws that still have all their teeth. But virgin girls or boys lacking, the older men will sit and chew. Ritual requirement for the young to chew kava for their elders has been outlawed on most of the Pacific Islands. Indeed, due to zealous Christian missionaries who confuse faith with culture, the mastication of kava has been almost completely replaced by pounding, where kava has not been banned completely. On one island whose inhabitants were converted by Seventh Day Adventists, the kava plant has been eradicated entirely: rooted up, gone. One of the results of the suppression of kava drinking is the rise in alcohol consumption. Alcohol and kava are almost never mixed – their natures are so opposite, despite the similarity of the staggering characteristic of both inebriations. Kava is the plant of peace, of quiet speech or no speech at all, while alcohol (according to the Islanders) brings out aggression and boisterousness.

> *Sometimes I think that history is a war of poisons, and that bipedal hominids are mere pawns and soldiers, mouthing whatever slogans or propaganda are current, but ignorant of the designs and strategies of the true plant generals who direct the action from a realm beyond our usual ken.*

The juice of the softened masses of root is squeezed out several times. Kavalactones are resins and insoluble in water: the chewing creates an emulsion. This is the finest kava. It is said to clear the head, to relax the body, to ease sorrows, and to sharpen vision, hearing, and memory.

Effects Anaphrodisiac. "Boys never want girls after kava." Kava as *petit mort,* a "little death," obviating the need for sexual relations.

The Plant A shrub with heart-shaped leaves. The rootstock grows quickly and is ready to harvest in as little as three years. If left to grow, kava can exceed heights of ten feet.

The Ally Associated with exchange. Gifts. Communication between realms. Exchanges between social classes. Congress with the dead.

> *Necessary for any business deal: a large kava bowl on wooden legs in the general store for the customers.*

For conflict resolution or domestic quarrels. Kava is like *ska Pastora* this way, but without the bright spotlight on "depth-truth," or like MDMA, but without the intensity of "depth-emotion."

Third parties will sometimes try to make feuding families drink kava together so that they will talk and negotiate. Gifts of fine kava cultivars are given to seal the agreement.

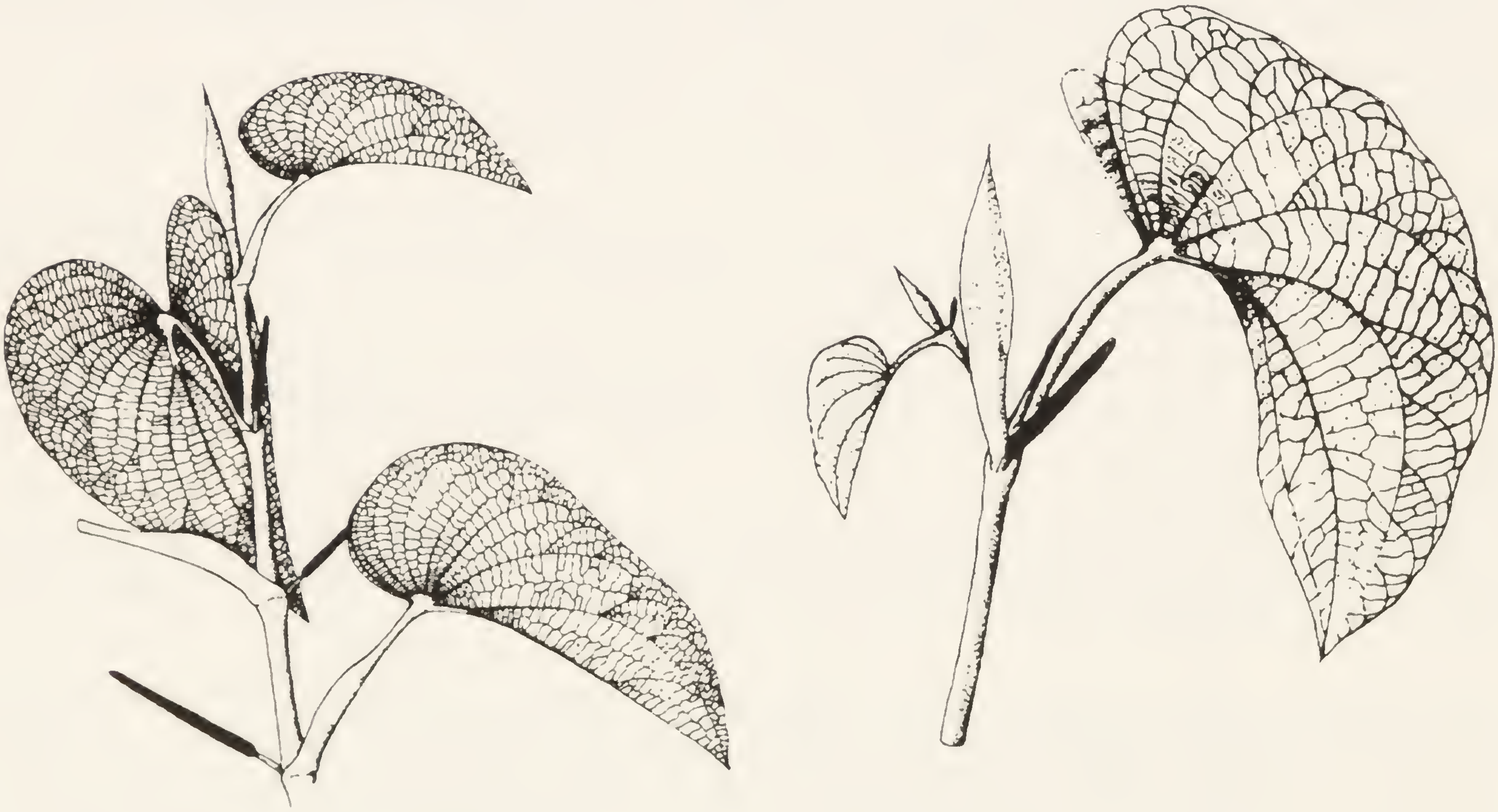
How Taken In kava bars, large mechanical meat-grinders are used to mash up the root. The juice is strained and sometimes diluted with water, which can make it look muddy.

Poesis The kavalactones are lipophilic resins. It was once believed that the chewing of the kava root set up enzymatic reactions that led to fermentation. As Louis Lewin stated, "This is false in every respect." The purpose of the chewing is to release the resins into an emulsion. The resins could easily be extracted with oils or organic solvents.

In the United States, unless you grow your own *Piper methysticum,* the best you can do is to buy the dried root or root powder at an herb store with good connections. (Growing kava, incidentally, is not difficult, but, except in Florida, requires a greenhouse.) One herbalist I spoke with boiled the root in coconut milk, surmising, correctly, that the fats in the coconut milk would extract the lactones.

But I find boiled coconut milk thick and unappetizing. Most Pacific Islanders now use dried root, and simply make their kava by pounding the dried root with some cold water, squeezing it out, and then repeating the procedure.

My own kava technique varies, depending on whether I have root or powder. Dried root stores better than does powder, and as I have no way of knowing how old the material in question is, as it has passed through a number of middlemen, I try to buy root. It usually comes coarsely chopped. One strong dose is half an ounce of chopped, dried root. I grind the root into a coarse powder in that most useful of machines for a plant doctor, an electric coffee grinder. Instead of just whisking the powder up with water as is traditional, I sometimes add a tablespoon or two of cream to the ground root, along with the contents of a lecithin



PIPER METHYSTICUM

capsule (about 1,000 milligrams). Grind this mixture well in a bowl, add one-quarter cup of water, and stir with a whisk or an eggbeater until it thickens into an emulsion. Strain through a fine wire jelly strainer, and press the emulsion out with a spoon or your fingers. Return the mass of root to the bowl, add another half cup of cold water, and whisk some more. Strain as before. Drink the filtrate. I get enough to fill a coconut shell cup. If you want to be ritualistic, hold the coconut shell with both hands and drink it all in a single draught.

With powdered kava, of course, you can skip the grinding. Unless you are lucky enough to get very good kava, you will probably want a second shell in forty-five minutes or in an hour or two.

Try to develop a personal relationship with the kava buyer at your local herb store. Maybe she drinks kava already. Stress the importance of finding a good cultivar: for example, *white kava* is preferable to *black kava*. Try to get the buyer to send the word on up the chain of command that it's better to pay a little more and get better kava. One store I saw was selling leaf instead of root, which is, for our purposes, useless.

See if you can make a deal to buy in quantity. Then write to your congressional and senatorial representatives and tell them to keep the FDA out of the herb stores.

Effects Immediate numbness in the mouth. Kava is a very effective local anesthetic, rivaling cocaine. Ethanolphilics and other detractors say that kava "tastes like dirt." Perhaps. But if dirt, it is clean dirt, on the green side, and somewhat peppery and bitter.

In larger doses kava affects balance and motor equilibrium, dilates the pupils, and alters perception of depth and distance:

> *changes in spatial relativity, like reaching for a doorknob but finding the door is clear across the room*

The Plant The dried root contains 3 to 20 percent kavalactones, depending on the variety, with 15 percent about average. One gram, or a gram and a half, of resin is a strong dose. Effects last from two to eight hours.

There is no kavain in the leaves. Ascorbic acid in the leaves would quickly reduce the double bond between the two carbon atoms joining the phenyl group with the lactone ring.

The Ally Kava is often associated with semen. At traditional all-male kava banquets ribald jokes and double entendres abound.

> *"Hey, have some of my kava."*
> *"That new woman, I think I'll give her some kava."*

In one story, the kava shoot is a penis that copulates with a woman who happens to step over it. She becomes a plant person. And it spreads around from there, until finally everyone on the island is a plant person.

Hybrids, part human being, part kava kava.

Sometimes the plant is female: like breast milk. Milk with a female smell, the scent of female genitalia. Milk for adults as breast milk is for infants, we being children in relation to the great power beyond. Image of the nourishing, the milk of the dead sister – the plant that sprouted from her corpse. Ghost nourishment.

Sometimes the plant is bisexual.

Effects

"Noise and light spoil the kava."

Pharmacology

The psychopharmacology is poorly understood. Kavalactones probably reduce spinal rather than cerebral activity.

Kava acts as a hypnotic in moderate or large doses, particularly strains high in DHK and DHM. Both DHK and DHM are more powerful as analgesics than aspirin.

It was noticed that no yeasts, bacteria, or fungi attack kava, so kavalactones are antimycotic. Kavalactones are also diuretics, anticonvulsants, spasmolytics, and local anesthetics. In folk medicine kava is used to treat gonorrhea, menstrual cramps, epilepsy, muscle aches, toothaches, sore throat, and many other ailments.

The Plant

Smuggled onto the island by two women in their vaginas, hence the characteristic odor of the drink. Others say it sprouted from the semen of a dead kangaroo.

In many Pacific Island languages *kava* or *'awa* also means "bitter" and is used to mean "poison." Being under the effects of kava is to be "poisoned by kava."

Tools

Grinding stones. Carved kava cups. Coconut shells.

Toxicology

Kavalactones can attach to proteins in the skin to form allergens, and in people prone to allergies, heavy and sustained use of kava can cause scleroderma, "alligator skin," or even lesions. The condition disappears when kava consumption is decreased.

An anonymous paper reported that kavalactones concentrate in the liver and cause damage, but this has not been substantiated. One Australian scientist has implicated kava in Aboriginal health problems, including weight loss, liver problems, shortness of breath, and skin rash. The problems are serious enough to require more study, but it is not clear what part kava plays, as many of the same persons drinking "excessive" amounts of kava had previously been abusers of alcohol.

In the Pacific Islands, one half of the population (the men) have been consuming kava for centuries, while the other half (the women) have not. This is a made-to-order epidemiological study. No known health problems have been found that correlate with these two easily recognized and easily trackable groups.

Matters of State and Liberty

Kava has been (and is) threatened by missionaries and alcohol, but seems to be making a comeback, even flourishing, on some islands. The missionaries, even the most liberal, were repelled by the chewing and spitting, which they considered unhygienic. Beyond that, they understood the importance of the kava ceremony to the traditional culture, and thus considered kava an impediment to the conversion of the islanders to the One True God.

Speaking of which, Marxist sociologists criticize the use of kava on the grounds that it creates a false goodwill between classes that, in a state of movement and economic differentiation, ought properly to be at each other's throats. This remnant of the old apocalyptic millenarian faith is against any half-measures or compensations, against any opiates or palliatives, believing that only by things getting worse will the Revolution come to save us.

They may be right, except for the part about saving. And the part about Revolution.

Class

PACIFICA: *Peace-making, bringing peace.*

Lewin included kava in his class *hypnotica;* Schultes and Hofmann classified kava as a narcotic and hypnotic. We place it on the path between the narcotics and *thanatopathia:* sharing of both the euphoria of the narcotics and the mental alertness and moral calm of tobacco.

A benevolent ally to abate craving,
a poison to subdue poisons.

A moral peace:
peace in body,
peace in mind,
the peace of twilight and evening,
the Prince of Peace –

kava.

ON POISONING WELLS

There is nothing so beautiful or so profound that the Forces of Evil cannot warp and subvert it for their own base and nefarious ends. You must understand this well, if you be a poisoner, a doctor of the *poison path.*

There is no panacea. Do no trust those who believe that there is.

Thus we have the practice of "poisoning wells."

The doctors at the United States Central Intelligence Agency had investigated the possibilities of putting LSD into municipal water supplies a decade before the Sixties radicals considered the same idea. That is not the meaning of "poisoning a well."

Confronting the nature of evil. The evilness is us.

We are the evil. And within evil is the only hope for salvation. The evil is the remedy. You must dance with evil. Shunning only makes it stronger. It will not die – it will metamorphose into a new shape that we can't identify, an epiphany unrecognized.

Dionysus needs temper.

A formal discipline that does not deny it but sits with it patiently, letting it come and go. Becoming intimate. Merging, kissing, enraptured in orgasmic bliss. Not chasing the god, but making love with it. Bedding Satan, Why not? The power of love is beyond measure!

This illustrates the practice of "poisoning wells."

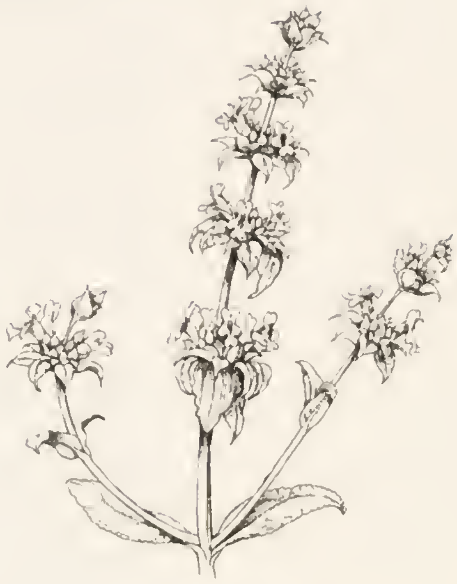
EXISTENTIA

SALVIA DIVINORUM

Common Names Diviner's sage, *ska Pastora, hojas de la Pastora*, seer's sage, *la Maria.*

The "Just This" plant. The "Emptiness" plant.

Related Species *Salvia divinorum* contains a diterpene, salvinorin. Some *Coleus* species are rumored to contain similar compounds, but this is still unconfirmed (bioassay reports are mostly negative). *Salvia splendens* contains salviarin and splendidin, both diterpenes, and we should expect more from other species. No psychotropic activity has been reported for those compounds, but that does not close the case – I heard background whispers of "placebo effect" for years when talking about the powers of dried *ska Pastora* leaves!



SALVIA
MELLIFLORA

Salvia sonomensis contains a camphorlike substance that is a mild stimulant when smoked. *Salvia officinalis* contains thujone, constituting in some varieties more than 50 percent of the essential oil.

But those plants don't really have anything to do with me.

True.

Taxonomy A true sage, like cooking sage. Mint family. There are a thousand species in the genus, and five hundred species in the neotropical subgenus *Calosphace,* to which *Salvia divinorum* belongs. Many temperate *Salvia* spp. are adapted to xeric conditions, such as black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and purple sage (*Salvia leucophylla*) of the California chaparral. *Salvia divinorum* is a hydrophyte.

The Plant Square-stemmed, winged margins; the stems hollow and succulent. The stems will grow to more than eight feet if supported. Commonly they fall over, rooting where they fall. Axillary branches easily sprout from the nodes. The plant flowers when the days shorten: long graceful racemes of fragrant white flowers, the calyces deep lavender. I sprinkle the flowers into salads.

The Ally She can be shy. Sometimes she has to get to know you for a while, before she will come out and say hello. But once she appears, are there any who are more direct?

Part Used The leaves. The stems can be juiced.

How Taken, The Path of Leaves

Thirteen pairs of leaves, the stems all facing the same direction, are rolled into a cigar and eaten. That is the traditional way, the way of the Keepers of the Plant, the Mazatecs. The leaves are used the same way mushrooms are used, with candles (which are later put out), prayers, and singing. The ceremony is performed at night, in a darkened room. The darker the better. And the quieter the better: both light and noise have a way of dissipating the experience.

It is not uncommon for the Mazatecs to wash the leaves down with a swig of tequila. The tequila cleanses the palate and may aid in the final absorption.

It lights up the mouth like a rainbow,
it's like a pastel sunrise breaking in the east.

There are strict taboos to keep for several days after eating the sacred leaves, such as not having any sexual contacts. It is also important to be ritually mindful when collecting the leaves, and also in cleaning up after the ceremony.

Chemistry

Unknown until recently, and still far from understood. In 1982, Alfredo Ortega and his associates isolated a bicyclic diterpene, $C_{23}H_{28}O_8$, from material gathered in Oaxaca and named it *salvinorin*. Another group, led by Leander Valdes at the University of Michigan, independently isolated the same compound and named it *divinorum*. Because Ortega published first, the name *salvinorin* has precedence. Neither author tested salvinorin for human activity, but recent tests by Daniel Siebert and others, myself included, have proved the psychoactivity of salvinorin beyond doubt.

Other compounds in the fresh leaves may act synergistically in creating the extraordinary and variable effects of this plant, perhaps by inhibiting the lytic action of an enzyme or of the digestive juices.

The Plant

seer's sage
        truth sage
dream sage
        ghost sage
lizard sage
        mouse sage
soft-footed sage
        cymbals sage
roller-coaster sage
        rocket sage
wake-up sage
        it's-like-a-dance sage
silver-fox sage
        bare-light-bulb sage
waterfall sage

Effects

It's like a mirror with no frame: some don't see it at all; some do, but don't like what they see.

> *It's like cat paws, soft cat paws pressing, or like a bunch of bird tongues lapping the mind. Or like tiny fingers, the way ivy fingers reach out to climb a wall . . .*

Some say it is a sensual and a tactile thing. Some say it's about temporality and dimensionality, that it's about time travel. Some say it is about the Root Energy Network, or that it is about becoming a plant.

> *"Bird tongues lapping the mind." We timed them: they hit four or five times per second. It may be the theta rhythm.*

How Taken, The Bridge of Smoke

The dried leaves may be smoked. A large-bowled pipe, like a tobacco pipe, is about right. Rolled cigarettes are less satisfactory, because it is difficult to get a deep lungful of the smoke. Hold the smoke in. One to three lungfuls are enough.

Five or six small tokes do not produce the same effect as one large inhalation. The reasons for this are not clear. Perhaps the brain responds to salvinorin within seconds, with neurochemical defenses.

The best technique is to use the Val Salva maneuver, beginning by emptying the lungs of air and then layering the smoke until the lungs are completely full. Then hold the smoke in as long as you can. Release gently.

The Ally

Frequently people experience little effect from the leaves in their first meetings. The power of the leaves seems to slowly build toward a climax with successive ingestions. Díaz was the first to comment in print on this phenomenon. He drank the juice of the fresh leaves six times and noticed an "increased awareness of the plant's effects" each time.

Contrarily, sometimes the ally rolls over and crushes a person without warning, first visit. And a few people seem obdurately immune.

Effects, The Bridge of Smoke

> *Over a period of several weeks,*
> *everything around me*
> *gradually became more intelligent.*

Pharmacology

Completely unknown. *Salvia divinorum* represents an entirely new class of entheogen. A Novascreen receptor site screening sponsored by David Nichols discovered no binding inhibition for the forty reference compounds tested, covering all major known receptors.

Salvia divinorum contains no alkaloids. In screening plants for psychoactivity, plants that do not contain alkaloids are routinely thrown away. Clearly that approach is too hasty.

Because of the quantity of material that must be ingested for diviner's sage to be fully active, it occurred to me in a light moment that *any* plant would be entheogenic if one ate twenty-six whole leaves at a sitting. That's a joke, but you can't really get the point until you eat diviner's sage yourself.

> *It is bitter, my brothers.*

Effects, Physical Some people experience hyperthermia, a warming of the body. Nausea is rare, though by the eighth swallow of the leaves the gag reflex becomes overwhelming. Still, except for the swallowing part, almost nobody gets sick at the stomach.

The Plant *It's faster than the mushrooms, and older.*

An extremely rare cultigen, found only at a few locations in Oaxaca. There are specimens in botanical gardens, and in a few private collections, but lack of genetic diversity is a concern.

The plant is endangered by the forces of imperialistic religion, and has been for four hundred years, possibly longer.

Her real name must not be told –
Her real name is closer to Medusa than to Mary.
"They came with crosses –
they came to drag us
from our huts, from our beds,
the soldiers that serve the priests."

en el nombre del Padre
en el nombre del Hijo
en el nombre de Espíritu Santo

The Ally Consciousness has to do with energy and light. It is really very simple. Neither animals nor people have consciousness. It is plants that have consciousness. Animals get consciousness by eating plants.

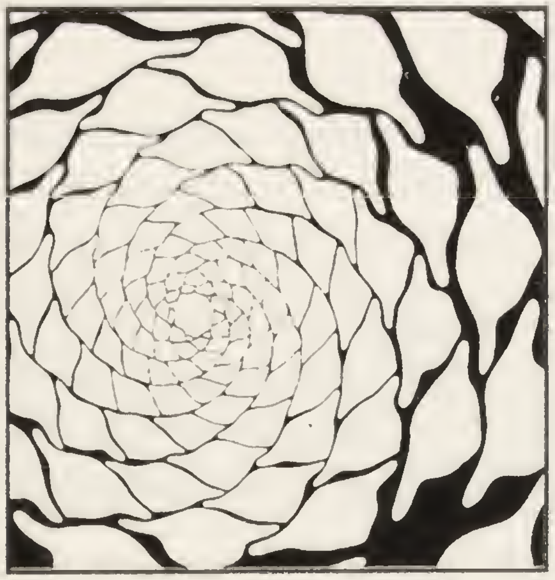
We like to walk around sometimes, and to see new places.
We like some of those animal things, like mating.
Sometimes we get curious
to see what it is like to program computers.

The Plant This plant is the great secret of our tradition.

Not secret anymore!

Few have heard of it. Fewer know what it looks like. Fewer still have ever met the sagely ally, yet the alliance forms invisible links wherever it goes, across continents and across oceans. The ally blesses some, eludes others.

That such an ordinary-looking plant, kind of succulent and without any alkaloids, can be as subtle and effective as the seer's sage is, causes one to wonder about other green plants – perhaps there are other such, sisters to this sage, waiting for someone to give them the time and attention they deserve.


LEAF-PRIMORDIA
AT THE GROWING-POINT

People ask, "If it's really so good, why is it so obscure, why haven't more people heard of it?" The answer has to do partly with history, and partly with intention, and perhaps partly with the intrinsic nature of the plant's effects.

First off, the plant is not at all obscure to her people. They know her and love her, or know her and don't love her (some think the plant devilish). Most of our ("our" meaning Western literate culture) current knowledge about *ska Pastora* can be traced back to the visit of Gordon Wasson and Albert Hofmann to Maria Sabina. Most of "our" plants are also from this transmission. Several particulars of the Wasson/Hofmann/Sabina meeting account for some of the plant's recessive reputation. For one, Maria Sabina's primary ally was the mushroom: she only used the *little leaves* when the *children* were out of season. But there are other *curanderos* who prefer the leaves to the mushrooms. Don Alejandro says that taking the mushrooms too often "will make you crazy," but that the Virgin, who speaks through the leaves, is more gentle.

Second, when Hofmann returned to his laboratory at Sandoz Pharmaceuticals in Basel, he had brought some juice from the *Salvia* leaves back with him, "preserved in alcohol." When this juice was deemed by self-experiment no longer to be active, Hofmann abandoned his intention to analyze the juice for its psychoactive principle(s). Hofmann reported that the unknown active ingredient must be unstable. This belief was incorrect but tended to inhibit further research for some years. My own reports on the effectiveness of smoking the dried leaves were dismissed by a number of my colleagues.

On the matter of intention, to quote Lao Tzu: "Those who speak do not know, those who know do not speak." Most sage people would rather not have their beloved ally spotlighted, or scheduled, or even much heard of or spoken about.

> *"This is the sneaky one.*
> *We caught all the others,*
> *but we couldn't catch*
> *this one –*
> *this one was too subtle.*
> *We've been after this plant*
> *for almost five hundred years."*

Lastly, I think that some of the plant's obscurity is intrinsic and will endure. How many really want to see? Most people are after the side effects, and in the matter of sensual side effects the little leaves are indeed a little sister to such a giant as *Cannabis.*

But just because the plant is not a party-goer, is not harmful, and is not abused anywhere in the known world does not mean that it would not be persecuted by those who rule by fear, if they knew of its existence. So in summation we will reiterate the early assessments of the plant and agree that it is a minor psychtropic of well-deserved obscurity.

Now say "mum."

Mum.

The Ally This plant has a sense of humor!

The Plant

garden-green sage
bitter bitter sage
compost sage
sweet-smoke sage
riverbank sage
shade-leaf sage
crenate-leafed sage
come-to-me sage
get-the-willies sage
whispering sage
get-well sage
get-fooled sage
candle-in-a-wind sage
nobody-knows-it sage

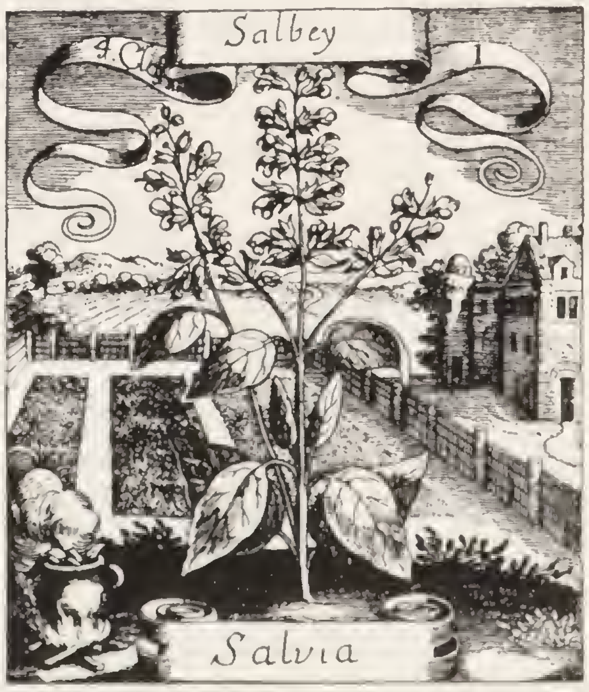
The Ally It is when you are really stuck, when you really don't know what to do, when you are nearing the edge of funk and self-destruction, that the leaves are the most powerful and the most precise. And symmetrically, for one not seeking engagement, for one seeking diversion, the plant is not much fun. Outside of her sacred context, *la Pastora* has surprisingly little to offer.

It's not a spectator drug.

Indeed.

History It seems likely that *ska Pastora* was once much more widespread than it is today. Cultigens generally have long histories, and *Salvia divinorum* is probably no exception. What is not clear is whether the decline of the plant began with the Spanish Conquest, or whether it was already in decline, and, if so, if the reasons were religious or political, or something else.

Gordon Wasson speculated that *Salvia divinorum* was the *pipilzintzintli,* the "Noble Prince" mentioned in Aztec codices. One problem with this identification is that *pipilzintzintli* was said to have both male and female varieties while our *ska Pastora* is, botanically speaking, perfect. The Aztecs were skilled botanists and surely knew the difference between male flowers and female flowers. But it is also possible that the reference to gender is metaphorical, relating to nonanatomical properties of the plant, rather than to dioeciousness. There are some known examples of such use of gender, so Wasson may indeed be correct. It would be extraordinary if



SAGE, FROM VALENTIN'S KRAUTERBUCH, 1719

a plant of the power and the stature of *ska Pastora* were not well known to the Aztecs.

The Ally

Questing for the muse's spring, up some cold canyon,
stormdrain, up bloodvessels, canyonwalls of
flesh, rhythms surging in the darkness –
the home of the leaves, their nest within
the soul: even consciousness needs a soul. The plants
have consciousness, but no souls. For some of them,
that isn't enough.

How Taken, The Path of Leaves

Six to ten or more leaves are chewed into a bolus and kept in the cheeks. The absorption is through the buccal membranes. Siebert's experiments (Siebert 1994) with the juice of the leaves demonstrate conclusively that most, if not all, of the power of the leaves is deactivated in the stomach. In Siebert's experiments, those who swallowed the juice quickly and then rinsed out their mouths with water experienced no entheogenic effects, while the group that simply kept the juice in their mouths and never swallowed it were all affected strongly.

I still prefer chewing and swallowing, if only from a sense of tidiness and tradition. Chewing with your cheeks full keeps the material in motion and insures that all parts of the mucosa are constantly bathed with sage leaf. More than once it has seemed to us that it is the stems, those chewy chewy stems, that finally push it all over the edge.

One intrepid researcher called Salvia divinorum "the best-tasting psychedelic plant he'd ever eaten." Good point.

Effects

The effects are different, depending on how the plant is ingested, on whether you meet the ally on the Path of Leaves or by crossing the Bridge of Smoke. And also depending on whether the plant has accepted you. That's metaphorical. Or is it? What neurochemical explanation could account for a threshold that, once breached, will still be open a year later, with no exposure to the plant intervening? Besides, neurochemical explanations are also metaphorical.

The plant is self-concentrating.
Your body is the alembic.

Smoking the dried leaves produces immediate effect.The effect of eating fresh material, while slower to come on, is a deeper and more sustained experience, often with strikingly colored visuals. Drinking tea made from dried leaves falls somewhere in between. (Salvinorin is practicably insoluable in water. The best way to "ingest" dried leaves is to soften them with some hot water, then keep the leaves in the cheeks just as with fresh material.)

Note that while the dosage by ingestion is ten to thirty leaves, the smoking dose amounts to one or two leaves.

It's the immediacy, the seamless immediacy . . .

sometimes it's like it doesn't do much
of anything at all, but how many plants
do nothing with such clarity!

The Plant There are rumors that the seer's sage may grow wild on some of the less accessible plateaus in Oaxaca, but this is unconfirmed. Her people grow the plant beneath coffee trees, or along streams in ravines. They reportedly do not grow it next to their homes.

at night, it might envelop the house . . .

The plant is very patient.

The Ally She has many epiphanies. Not all of them are shy, and not all of them are "she." One person encountered the ally as a giant – an immeasurably ancient giant wearing a belt of human skulls. The giant looked directly at this person. The giant wanted to know why he had been summoned. The giant did not want a trivial answer.

The Plant

checkerboard sage
    paisley sage
amazing sage
    calico-ribbon sage
vortex sage
    owl sage
shape-shifting sage
    skin-walking sage
who-are-you? sage
    something-is-moving sage
get-serious sage
    look-we-have-come-through sage
on-your-own sage
    she's-leaving-home sage
metate sage

Class EXISTENTIA.

Ska Pastora is not a hallucinogen. That is not to say that it does not share some of the characteristics of class *phantastica,* it does. But there are also differences. The "true" hallucinogens all act on the 5-HT2 receptors. While the receptors of diviner's sage have not been discovered, the experiential evidence points to some new receptor, or to some holographic inundation of mind. And while many hallucinogens will help one's golf game (or, as Dock Ellis proved, one's major league pitching), a certain muscular discoordination accompanies the sage inebriation.

On the *Pharmako/Poeia* mandala, I put the little leaves on the path between *phantastica* and *inebriantia,* and name it *existentia*. By *existentia*, I do not mean anything Cartesian, nor even David Bohm's separate-from-self implicate order, but mean that which precedes essence.

It's a personal thing. Existence.
If you can just stop thinking about it.

Salvia divinorum is what you get by crossing an entheogen with an atheist.

Effects *It's not like being high, it's more like being practical.*

CORRESPONDENCES

ACTIVITY	Domestic Affairs
ANIMAL	Uroboros
ARCHETYPE	Fortune Teller
ART FORM	Lyric Poetry
BODILY FUNCTION	Circulation
BODY PART	Mouth
BUDDHA REALM	Prajna Bhumi
COLOR	Cobalt Blue
COSMIC ENTITY	Singularity
CRUTCH FOR	Indecision
DIMENSION	Fractal
DISCIPLINE	Augury
ELEMENT	World-Stuff
FORM OF ENERGY	Windmill
FORM OF IGNORANCE	Complacency
GEMSTONE	Tourmaline
GEOMETRY	Topology
GOD	The Mother of God

The Plant In all of our Pharmako/Poeia, this plant is the hidden pearl. Poets, like vintners, love such surprises, and seek them out beyond their better known brothers and sisters: an unknown poet found in a faded chapbook with light in his verses, an obscure vintage the reviewers missed, dust-covered, but filled with mouthfuls of delight. The little leaves, hiding off in the mountains, have successfully avoided the front pages for four centuries.

> *A Taoist sage, in another range of mountains, after many years of studying the secrets of alchemy with his master, feeling fully accomplished, descended the mountain to move into the world. When evening approached, he*

> *stopped at an inn. The people at the inn marveled at the light that seemed to hover about him – a sort of magical glow. The sage was chagrined, realizing that his studies were only half completed, and returned immediately to his teacher.*

To visit the *hojas de la Pastora* is to visit an oracle, and she should be approached with the same reverence.

Caravans of gold, threading their way
from Sardis to Delphi

Why would someone want to consult an oracle? Why would someone seek a vision? Or it's like talking to a therapist, to a counselor – the leaves are like the *kalyanamitra,* the spiritual friend. They can tell you things.

Or make you eat your words.

It is difficult to speak.

P*oesis* Recent studies by Aaron Reisfield (Reisfield 1993) demonstrate that *Salvia divinorum* is not completely self-sterile, as had been assumed: the plant can produce viable seeds, though very infrequently. Nor did Reisfield find any significant difference in the production of viable seeds from flowers pollinated from the same clone and those pollinated by plants collected from different localities. It is of course possible that there is little genetic difference between any specimens of *S. divinorum,* even those that today grow in widely separated areas in Oaxaca.

Reisfield's observations strongly suggest that *Salvia divinorum* is a hybrid. The pollen grains of *Salvia divinorum* have low viability, indicative of disharmonious parental genes. But low pollen viability is only part of the reason that *Salvia divinorum* rarely sets seed. Even with hand pollination only 2 or 3 percent of the nutlets mature. Further exacerbating the problem of reproduction, in Mexico, the plant only flowers sporadically. Flowering seems to require more sun than is optimal for vegetative growth, so it is only plants growing on the margins of its normal habitat that flower at all.

The main barrier to fertility, according to Reisfield, occurs after the pollen tube reaches the ovary. But he was unable to determine whether the infertility was due to inbreeding depression, a condition not uncommon among plants with a long history of human relationship; hybridity; or some delayed-action effect of self-incompatibility. If *Salvia divinorum* is indeed a hybrid, the parents are long lost in poisonous prehistory – Reisfield knows of no two sages that would account for the morphological features of *la Maria.*

For you, if you want *ska Pastora,* you will have to get it the same way everyone else has for the last two thousand years: from a cutting from someone who grows it.

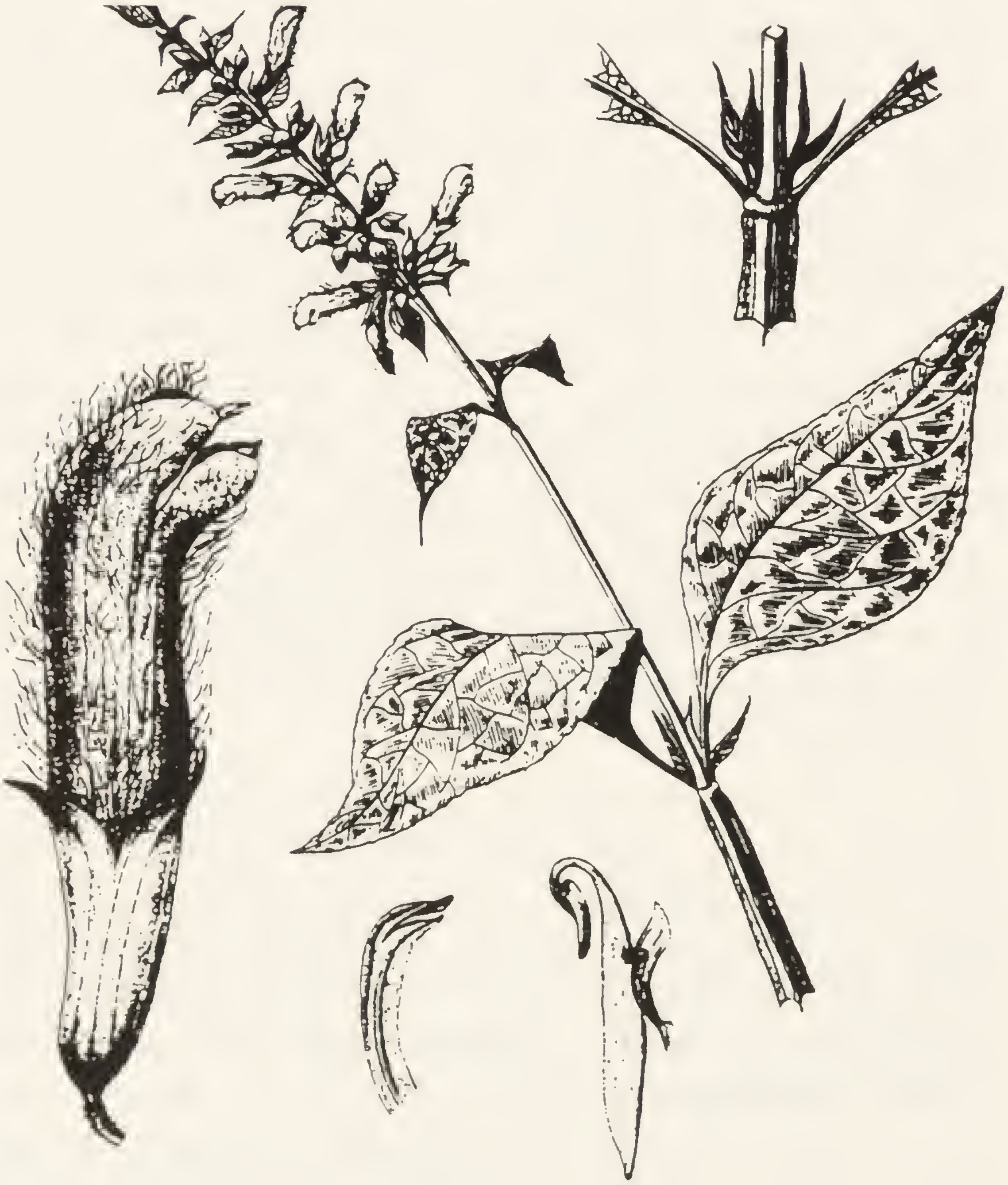
If your shoot is already rooted, or if you live in a humid climate, you can go ahead and plant it directly. Plant it in shade or scattered light; the leaves don't tolerate a lot of direct sunlight – I've had some plants do well with almost no sun at all.

If you live in the arid interior, you may have to mist the leaves regularly, or protect them with a humidifier. *Ska Pastora* loves the redwood country, where it gets fog.

The plant will thank you for some feeding. She needs water, lots, but be careful about root-rot in pots. Also, the plants wither if they get root-bound. Protect them from frost.

The Ally

Once you see it, you know it
was there all the time, so why
is it all such
a big deal? And why
do we keep forgetting?



SALVIA DIVINORUM

CORRESPONDENCES

GODDESS	Isis
GRAMMAR	Presyntactical Mammalian
HISTORICAL AGE	Future/Eon
IMAGE	Labyrinth, Hall of Mirrors
LANDSCAPE	Garden
LOGICAL OPERATOR	Identity
MACHINE	Bathyscaph
METAL	Antimony
METAPHOR	Borders
MINERAL	Turquoise
MUSICAL INSTRUMENT	Bull-Roarer
MYTH	Parallel Universe
NUMBER	Complex
OCCUPATION	Poet/Soothsayer
OUT-OF-BODY REALM	Clairvoyance
PERIODIC TABLE COLUMN	Rare Earths
PHASE OF MATTER	Nuclear Condensed
PHILOSOPHER	Anaximander
PHYSICAL CONSTANT	Fine structure constant: $\alpha = 2\pi e^2/hc$
PLANET	Moon
POISON	Terror
PROPORTION	Radial Symmetry
QUARK	*Nen,* The Quantum of Time

On Divination

I used the Bridge of Smoke, laying out the cards. I had smoked lots of times before but this was the first time it really happened. An abyss opened. History opened. The manipulation of the cards by my hands seemed to amplify the effect. The cards fell perfectly. Each one revealed the details and development of my story with a precision that was hair-raising. Then I remembered how Crowley had said that you have to get to know the cards as people. The instant I thought that, the bottom dropped out of the cards, the background of each card became a hole in the table, like an open grave. Then the little figures on the cards moved a little. They shook free and started floating about an inch above the top of the table. They were all standing up and looking at me, waiting for me to ask them something.

The species is well named.

The Ally It's anti-escapist, the opposite of escaping. It's not likely to be popular. It can be empathogenic, but it's more telepathic than emotional. It lights up the souls of those around us: we hear/know what they really think, what they really want, what they really have done. It's ideal for couples work, for keeping in touch.

On the Darkness The ally loves the darkness. Light can interrupt and suspend even wildly cosmic and disembodied states, seamlessly returning the petitioner to the mundane. Sometimes it is necessary to turn on the lights to attend to something or someone, a child perhaps. What is amazing is how immediately the interdimensional space reasserts itself when the lights are again put out.

> *The essence of the Path of Leaves is just a few friends sitting around in a dark room, perhaps drinking a little beer or tequila. Some talking. Maybe some singing or chanting. To how many people does that sound like a good time?*

What a joke! No wonder some people can't stop laughing.

> *Or maybe the darkness is to keep others from looking in.*

It may always have been a cultish plant, something on the edges.

> *La Maria is shy. She needs the darkness to illuminate the Logos.*

Or maybe the nighttime tradition is to avoid interaction with the rootless. The ally will take you beyond the little social games that sustain the daylight. You will see the rigidity, but you may not see the importance of sometimes playing along. An uncompromising insistence on the absolute could quickly get boorish.

> *Besides, daytime you have a job and have work to do.*

Effects Holographic. Even a very tiny amount of smoke can reveal the whole panorama. Dimly, to be sure, but all there, just the same.

The Ally

> *There was no me, but there was no not-me.*

The most "Zen" of any plant ally excepting rice.

Effects Staggering. Lurching. But not like drunkenness: the mind is completely clear. The effect is reminiscent of kava.

On the Logos The poison has entered the Word. Words become stepping stones, a floating walkway to cross the chasms between.

What we really are is a web of interconnections, the summation of all of our relationships, all the people we know and those we are still to meet. It's not that we are in the web, the web is what we are.

Vowel sounds change the colors; pitch and tone alter the shape of the enclosing space; semantics create texture. Sentences become palpable things, they take visible and tactile form, flying or sinking.

But all in the mind's eye, not in the eyeball: an interactive lucid dream accessible to the will.

> *I saw where thoughts come from, visually. Some were just forming – were seething in a kind of liquid surface, some of them went on and blossomed, became people and conversations . . .*

Poesis Contrary to written lore on *Salvia divinorum,* the leaves can be dried. If you grow the plant, you may only have enough leaves for fresh ingestion in the summer and fall. I cut my plants back in the wintertime – in case it freezes. I have had little success with freezing the leaves, or juicing them and freezing the juice. Maybe it would work. I just find the juice harder to use than the leaves.

But you can dry the leaves, that's the easiest thing to do. The dried leaves carry the smoking-ally.

Effects FIELD REPORT: A MAN, INVENTOR AND PAINTER

"There were things you didn't tell me. It took me a while to learn how to use it. I had to find the right dose. At first I was taking too much, six or seven lungfuls. Two or three is about right.

"It's like heavy *zazen,* like after a very long period of sitting, the place you can get to there. It's changed my life, turned my life around. Things are really going well.

"It's very intense, I call it a reality stutter, or a reality strobing. I think that having been a test pilot, and flying in that unforgiving environment with only two feet between our wingtips, helped to prepare me for this kind of exploration.

"There is something very pagan about it. I don't think you should tell anybody about it. Sex is fantastic. It sensitizes the skin. And it makes you want to go exploring. And sleep is great, I'm sleeping much better. A. said that it relieved her menstrual cramps. And her attitude."

The Plant

in-control sage
    smooth-moving sage
snake-skinned sage
    oh-as-little-as-that sage
fooled-me sage
    narrow-nosed sage
weasel-snouted sage
    creeps-up-on-you sage
falls-all-over-you sage
    loves-it sage
just-grows-and-grows sage

Effects

FIELD REPORT: A MAN, POET AND WRITER

"Hey, all of a sudden that stuff got strong! I used to use it for writing, but I can't do that anymore, it's too strong. But it helps me with some of my business dealings: like it told me how to talk to the producers I had to meet with the next day. I smoke it with my girlfriend. We call it 'the balancer.'"

FIELD REPORT: A MAN, SCULPTOR

"I had heard that it was going to be mild, so I took a lungful and held it in, and was expecting to have to take many more to feel a mild tingle. But it just overwhelmed me. It was so intense, so immediate. I had tunnel vision, I couldn't see anything except this tunnel in front of me, like I was going to pass out. Everything enfolded. I didn't like it. It was too abrupt, too scary. I recall feeling that if someone had walked into the room I wouldn't even have been able to talk to them. It is not subtle."

FIELD REPORT: A WOMAN, PAINTER AND POET

"I smoked it every couple of days for two months. I hate to say this about a plant, but I'm in love with it. It's remarkable. It took six or seven tries before anything happened, almost like it was laying down pathways or something."

my rootlets, my neural rootlets . . .

"Then, all of a sudden, a big whallop, and I mean big. Scary even. It's just remarkable. It is so present, so clear. My life has changed. It has shifted dramatically, and it's because of the plant.

"It is so much what it was, unequivocal. It wasn't like it was a high, it's just Mind. It's so honest! I feel like I was recruited, like I was enlisted."

heh, heh, heh . . .

"It has to do with specificity, the differentiation of form. Every form is filled with its own luminosity of detail. And this is true emotionally also, of my own emotions. Even the days in between the days I smoked I still felt I had this direct access. It's like the feeling after a meditation retreat, the post-*sesshin* feeling.

"I mean maybe I'm making all of this up. Maybe it was just oregano, but I call it 'my sweetheart.'"

The Plant

green-straw sage
comes-clean sage
one-puff sage
thin-skinned sage
gets-inside sage
falls-in-love sage
tells-you-she-loves-you sage
don't-get-antisocial sage
get-to-work-on-time sage

lizard-skinned sage
smoke-skinned sage
just-grows-and-grows sage

Effects It just gives you where you are. Wherever you are, that is what you get. If you are in darkness, you fly through darkness. The light and the faces you see are the faces that you always carry, the mental faces, lit by the glow of mind. If you are with your lover, the plant is an aphrodisiac.

The Ally With the leaves there is no place to hide. That is why it is good for finding lost objects or for identifying thieves. It is a poison that illuminates poison: use it to find dis-ease.

CORRESPONDENCES

QUANTUM FORCE	Ψ / Schrödinger Wave Equation
REALM OF PLEASURE	Skin
RITUAL EVENT	Birth
ROCK	Ophiolite
SEASON	*Samhain*
SENSE	Sixth
SEXUAL POSITION	Scissors
SIGN	Pegasus
SIN	Lust
SOCIAL EVENT	Exile
TAROT KEY	Moon
TIME OF DAY	Midnight
TOOL	*Phurbu*
VIRTUE	Temperance
VOWEL	High Back /u:/

The Ally FIELD REPORT, DAYTIME

> *It seemed that as long as I left the quid in my cheek it kept getting stronger. I spit it out about one-thirty. Had an amazing time typing at my computer: it was like the typewriter from the movie "Naked Lunch." M. drove me to the beach. I felt pretty much back to normal. Late in the afternoon we decided to go to a five o'clock movie. We had some time before the movie*

> *and I strolled through a used book store. A couple of poetry books were on the display shelf. Picked up Tagore. How vacuous! All those high-sounding words but no substance. He had only read about it, thought about it. It was all lies! It was so clear. The book next to it was Housman. Dense, but legitimate. It was there. He did it through clues.*
>
> *Suddenly I felt completely disoriented. What a fool I was to be out in public. How did I think I could handle going to a movie? The question "How high does it get you?" is meaningless. It's nonlinear. Only the threshold was significant, and the threshold could be so subtle!*

Poesis One of the active ingredients of *Salvia divinorum,* salvinorin, can be extracted from the leaves. Valdes and his group at the University of Michigan isolated 1.2 grams of salvinorin from 5.35 kilograms of fresh leaves, which they dried to 674 grams of milled powder. Valdes didn't report how many leaves he started with, but the leaves that I pick average 2.3 grams fresh, and dry to about 0.45 grams. That works out to between 1,450 and 2,350 leaves to yield 1,200 milligrams of salvinorin, or between 500 and 800 micrograms of salvinorin per leaf. I crumble up several leaves into my pipe, but never smoke more than a quarter or a third of the pipe, which is about one dried leaf. So, back-of-the-envelope, salvinorin is active at ranges of 500 to 800 micrograms, about twenty times more active by weight than DMT (dimethyltryptamine).

Quantitative experiments by Daniel Siebert, Jonathan Ott, myself, and others have since confirmed this arithmetic.

Effects, Salvinorin Many experience childhood scenes. Parents may be represented abstractly. Exceedingly fast changes of scene. Ontological revelations.

I have found one salvinorin "hardhead." Under my supervision, the man carefully and properly smoked a full milligram of salvinorin, vaporized in a glass pipe. After a few minutes he shrugged his shoulders, got up, and, trying to be polite, remarked that "maybe there were some visuals."

Poesis All of the information needed to isolate salvinorin is in Valdes's paper (or, another method, in Ortega's paper). While Ortega and Valdes had to isolate pure crystalline salvinorin quantitatively, simpler extractions would suffice.

But all of this raises some questions. Why do it? On the "Crystal Highway" the ally often shows a more precipitous, and more terrifying, face than she does on the Path or on the Bridge. Many who meet the ally on the Crystal Highway never wish to repeat the experience. The ally is always fast, but on the Crystal Highway she is superluminal. And controlling dosage at the microgram level requires some skill. The raw leaf seems so exquisitely balanced already.

The plant is legal; just grow it. You may learn something. It is plenty strong enough in its fresh or dried form. It is benevolent in that form. When you start dealing with molecules in micrograms, with glass pipes, with overdoses, you are up against possibly serious issues of toxicity. And the sacred leaves of the Shepherdess become a commodity. And then there are the legal considerations.

My advice is to make friends with the *plant*. If you want to socialize, consider smoking *Cannabis*; if you want to get high, try nitrous oxide or smoking DMT. Only if you are ready to walk with an *ally* should you attempt the Path of Leaves or cross the Bridge of Smoke. Just don't blame me if the green beings recruit you, and you become a plant disguised with legs instead of a person.

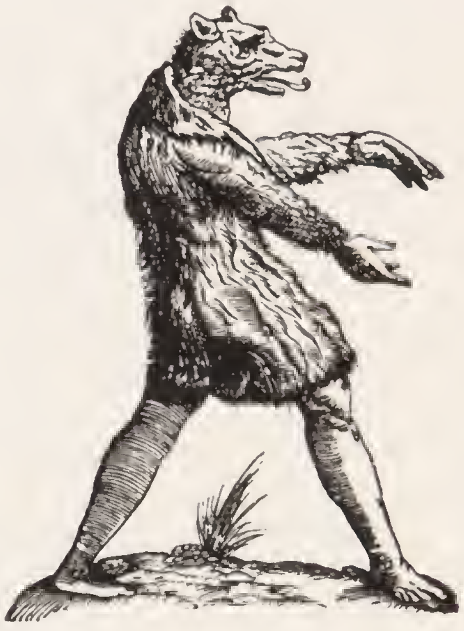
Effects, Salvinorin: The Crystal Road

I thought that I had measured out 600 micrograms. Later it occurred to me that a substantial amount of the solvent had evaporated in storage, and that each drop was as much as doubled in potency.

The fast drop. A trapdoor. Like on the scaffold of a gallows. The frightening terror of absolute emptiness.

> *His head dropped onto the table and his arms splayed out. The cards flew all over. He fell out of his chair, some vases and books and another chair falling with him. Then his body twitched and I watched him turn into a bear. His whole body grew taut. A deep guttural growl sounded from his throat and he began speaking in tongues. His eyes had completely glazed over. None of it was pretend. I saw the strength: two men couldn't have held him down, if he had run amok.*

Trance. Possession. The other side of shamanism, across that terrifying abyss: shape-shifters. There live skin-walkers and werewolves.



WEREWOLF

Think twice before offering a full moon medicine to a shape-shifter.

Field Report, the Crystal Road

All of the parallel universes were there. My childhood was there, and the death of my son. It was pure terror, all of it swirling through these breaks in time, breaks in what moments are made of. The whole universe was turned inside out. To get back I had to pull it all back through my asshole.

I had to destroy the worlds that I didn't choose to exist in. And some of them tried to stop me from doing that, they kept calling to me, telling me not to do it, that they wanted to exist. We were in the place you are before you are born, and the place you go to after you die. Once you step out of time, once you break through that continuum, all spaces are connected.

That I existed was the most amazing thing. The whole thing was an absurdity, but I couldn't come back unless I accepted it, all of it. All the pain of my life was waiting there, I—'s death was there waiting, but it was like

> *I had to choose, it took effort. I had to accept all of it in order to return to this particular universe.*

Poesis Ortega extracted dried and milled leaves with hot chloroform. He isolated salvinorin from the green residue left over after evaporating the solvent with column chromatography. He used thin layer chromatography to test for salvinorin in the fractions, and found it in the sixth and seventh of thirteen. The TLC plates were developed with 10 percent phosphomolybdic acid in isopropanol (ethyl acetate/hexane, 45:55, Rf = 0.7). Crystallize from methanol, melting point 238–240°C.

Valdes extracted with ether. He partitioned the dried extract between hexanes and 90 percent aqueous methanol, saving the polar components in the methanolic fraction.

An excellent product I call "4x" can be prepared by evaporating an ethanolic (or methanolic) extraction of the dried leaves, and sopping up the oily goo left over after evaporating or distilling off the solvent with "cleaned" leaves rubbed through a strainer. Use an amount of cleaned leaf equal to about one-quarter the original weight of the leaves extracted. The 4x enrichment is suitable for smoking in small pipes.

I've tried "10x" also. In that case, wash out the nonpoplar compounds from the goo with hexanes, more or less as outlined by Valdes.

Ethnobotany Tea brewed from four or five pairs of leaves is medicinal. Mazatecs use the tea for headache and rheumatism. It is also said to be good for anemia and problems of the eliminatory functions.

The Plant The leaves of the moon. With no other plant are preparation and ground state training so crucial. *Ska Pastora* is a moon doctors' plant. It could typify lunar medicine all by itself, its light is so pale and white. The lunar medicine is needed not to avert disaster, as is sometimes the case when dealing with the *phantastica*, but to hear the words, to comprehend the presentation. "Just this" is not at all the same thing as "merely this."

> *She will take who you are and run away with it faster than any plant I know.*

Effects The word *incredible* gets used a lot.

How Taken, Bottom Line Grow enough leaves to provide eleven to twenty-two leaves, thirty to sixty grams, for each person. It is traditional to have an extra bundle on hand as a "booster" for those who desire to return to the trance after their initial voyage.

Arrange the leaves so that the stems all face the same direction. Place them on the altar. Burn a little incense. Do this in a comfortable room, with cushions, preferably one that can be completely darkened. In the city, a tarp pinned over a window will keep out streetlights and such. Start as soon as it is dark.

By candlelight, roll your bundle of leaves into a cigar and chew away until it is gone, or until you can't find your mouth. Or until. Chew well. If you are not going to swallow, or are not going to swallow all of it, provide each person with a nice dish or basket to receive the exhausted quid. But chew long and well. Then blow the candle out. Be accepting. Cleanse your palate with some tequila, or some beer.

Are your eyes open or closed? Are you sure?

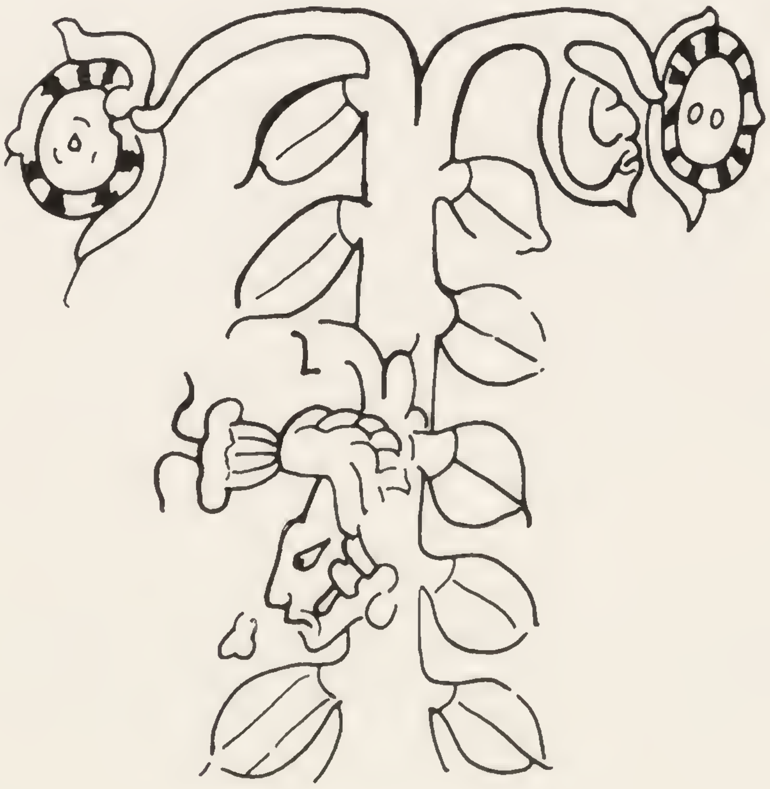
After about forty-five minutes, if you didn't finish all of your leaves, eat the rest. Or eat six or twelve new leaves, if you are inclined. Chanting and singing are appropriate, as is some tobacco. It is easier to get the leaves down if you have fasted half a day before the *velada*. Eat after: at midnight or thereabouts.

Best not to drive, but, if you must, never before you have eaten. Soups go well, and fruits.

Remember: your friends, the darkness, the gathering, and the chewing are all integral parts of the whole experience, and have been so for many, many centuries. The ancestors of two kingdoms await you.

The Ally

Sometimes the sage whispers, sometimes it shouts.
Sometimes it tells you to sing, sometimes
it takes your voice, walks off, leaving you
rooted, eyeless, and with the kind of voice
a plant has.



HUN HUNAHPU, FATHER
OF THE HERO TWINS OF THE POPUL VUH,
ACQUIRES PLANT CONSCIOUSNESS;
FROM A LATE CLASSIC
MAYAN VASE

The Plant

Enthusiasm. Entheos.

The plant of the gods, brought within.

La planta de los dioses.
La planta amada de los dioses.

The wise plant, the sage plant,
the plant of the Savioress.

La planta sabia.
La salvia de las adivinas.
La salvia sabia.

We welcome the plant.

La planta que salva.
La Salvadora de los sabios.

We are not different from the plant.
It is we who must save the gods.
It is we who must be diviners.

Somos nosotros que debemos ser adivinos.

EVAESTHETICA

ON WILDNESS IN PLANTS

Tobacco, marijuana
after that
you are in the jungle . . .

Poetic license, to be sure. Even the wildest plants have a way of being encircled by a shaman's *chagra*. The coca shrub and the opium poppy occur in cultivation more often than not. Still, the main world of plant poisons, the source of the wildness, lies beyond the fences of domesticity.

The wild gods live with the wild plants. Once, all of our gods were plants and animals. The allies are the ancient gods, their wisdom is the ancient substrate of our volition; they are the maternal transmitters of our vision and dreams. Anthropomorphic gods were the children of the plant gods. That is why destroying wild habitat is parricide, because the gods cannot live without their habitat, and it was the gods that made us, and gave us our culture.

The old religion survives on our altars: lettuce, almost wholly devoid of nutritional value, is a symbolic vestige of our earlier life as leaf eaters and is rarely absent from the table. Wild lettuce is a narcotic: a sedative and an analgesic and a medicine of virtue. Augustus, in gratitude to its curative powers, built an altar and erected a statue to *Lactuca virosa*. Almost any edible wild green is richer in vitamins than domestic lettuce. Table lettuce is to wild lettuce what the Protestant's grape juice is to Christ's blood, and plays a similar role. Part of us still knows that we need the Wild Redeemer.

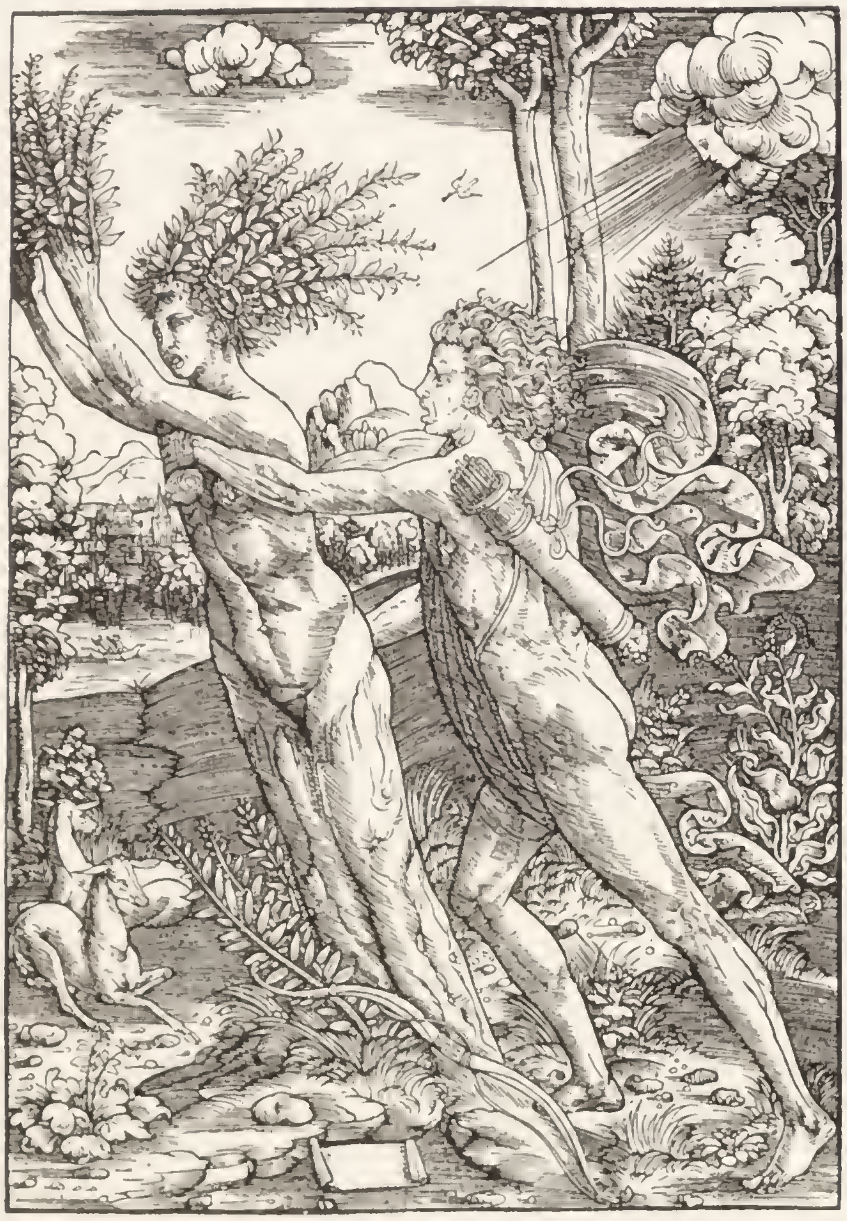
after that you are in the desert

We need the Wild Redeemer: to seek out its abode. We must fast, or eat locusts, or drink honey from a well, awaiting our interview.

We must claim stones as our sustenance, the earth as our domain. We must leap from the pinnacle of the temple. There is no redemption without a body.

after that you are in the mountains

ON CAMP FOLLOWERS



APOLLO AND DAPHNE, EARLY 16TH C.

The Parable of the Barley. The Parable of Hemp. We've met some of our best friends among the camp followers. Some of them we married.

Camp followers are the maenads of the wild part, wild dancers that have fallen under the spell of consciousness. They dance among us: on our garbage heaps and compost piles, and we notice them.

They are maenads or maybe secret agents. We watch their dance and we dance with them. We are both transformed. That's just what happens when plants dance with human beings. We still hear about it in the old stories. Metamorphosis.

The plant changes shape in our arms. She bends and stretches, reforms herself to fit to the pressure of our desire. We change her and the relationship changes our way of life. We take care of her and she takes care of us.

We didn't always live like this. We used to be foragers. Of course, that life had its dangers and its drawbacks also. It had an extremely long and evidently successful history, however – a longer history than since we've turned domestic. Domestic life is OK, but it still depends on the wild. Domestics sometimes forget this – always tragically. We *are* wild. We are part of it. If it dies, we die.

The plant hunter learns to sharpen her senses.
On the lookout: an alert. Are plant-walkers about?
Soul-stealing plants? She tastes
bitter healers, smells sweet-leafed herbs,
finds fiber plants and grain plants,

cold mornings,
mammoth-skin huts.

So we slept with the daughters of gods, and they tamed us.

CANNABIS SATIVA

Common Names	Hemp, marijuana, dope. AKA bhang, ganja, hashish, *mota*, weed, grass, et cetera ad infinitum.
Related Species	*Cannabis indica, Cannabis ruderalis.*
Taxonomy	Of the great dicotyledonous angiosperms: a proud carrier of the distinguished epithet *sativa* in superorder Dilleniidae. Older taxonomies had placed *Cannabis* in the mulberry family, the Moraceae, but the genus is now placed in the Cannabaceae, along with hops. The Moraceae have four sepals and four petals, while the Cannabaceae have five sepals and five petals.
Part Used	Limited only by imagination, but generally the leaves and buds. Unless you are a manufacturer, in which case you want the fiber. Or unless you want the oil, or a nutritious foodstuff, in which case you want the seeds. Industrial and agricultural possibilities abound: pulp for paper, textiles, medicines, biomass fuels, construction materials, plastics.
Taxonomy	Considered a monotypic genus for many years. Many botanists, Richard Schultes among them, now recognize three species. Of these, *C. ruderalis* is limited to Central Asia. *C. indica* is distinguished from *C. sativa* by its short stature (under four feet), dense branching, and marbled seed coats. But whether they are distinct species or varieties of one species is of only marginal interest to a plant doctor of our lineage. Our interest is in the plant's resident entity and its psychology.
The Plant	One of the greatest of all camp followers. Wild seeds – eaten, dropped, or thrown away – readily assert themselves on garbage heaps and middens, along trails, anywhere roving bands of human beings leave their characteristic scars on the land. *Cannabis* may be mankind's first cultivated plant, but it has never lost its wildness. Wild populations still exist with all of their vigorous variability, and cultivated strains can return to wild or weedy states with ease.
How Taken	Smoked or ingested: chilams, joints, bongs, brownies – all are effective. In ancient times ointments were used, applied to the skin for transdermal absorption.
The Plant	Dioecious, males and females stick to their own plants, though cases of spontaneous sex change are documented, generally much to the chagrin of the grower.

> *The males are commonly sacrificed. The harvested buds are a mass of unfertilized females, infant leaves, meristematic and resinous, stigmas and bracts all stuck together in tight racemes – the smell can travel on the wind for a mile.*

The plant has been cultivated for at least ten thousand years. There is no way to know how it was used first: for food, for fiber, or as a visionary power. The seeds yield an edible and useful oil. The herb has been used as a medicament for a variety of ills since antiquity.

In China hemp grows wild and tall, miles and miles of it.

The Ally

i called them and they came
out of the woods   the pine and the sabin
and the fir   tramping through the forest
with their roots in the air
at my crazy behest

they came along the forest trails
on their heads with glee
to dance at my behest
and there they danced in the clearing
on their heads

—Jaime de Angulo, "Marijuana, I"

Effects Euphoria. Thought magnification all the way to thought animation; formal structures seen on their own terms; aesthetic experiences, personal and sexual experiences, all brought into high relief. Self and other mix and pull apart. Perspective.

How Taken Many like to walk in the woods.

The Plant Latin *Cannabis* is cognate with English *canvas. Hemp* is from Old English *haenep,* Grimm's Law consonant shift from the Greek κανναβις. Other Indo-European cognates abound: Old Baltic *konoplja;* Lithuanian *kanãpês;* Persian *kenab,* Old Norse *hampr.* The Sanskrit is *cana, canna,* or *śana,* though other (noncognate) epithets are more common: *bhanga, ganja, siddhi,* and *vijaya. Bhanga* may be cognate with a proposed Old Iranian root ★*banga,* meaning "psychotropic plant," and ultimately derived from an Indo-European root ★*bhongo*, relating to divine intoxication, although this is vigorously contested by Martin Schwartz (Flattery and Schwartz 1989).

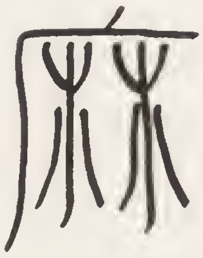
Canna, sweet canna, canna come home with you?

Non-Indo-European languages yield Assyrian *qunnabu,* Chaldean *kanbun,* Arabic *kannab,* and possibly Hebrew/Aramaic *kaneh.* The Assyrian *qunnabu* was used as an incense in the ninth century BC. Sula Benet's contention that the Hebrew/Aramaic *kâneh bôsm* ("aromatic reed") refers to hemp was dismissed by Ernest Abel because he interprets *bôsm* as "sweet," and claims that Isaiah 43:24 means "sweet-tasting," not "sweet-smelling." And who would ever call *Cannabis* sweet? Most biblical scholars now translate the words as "sweet cane," sugarcane, correcting the earlier mistranslation of "calamus." But in Exodus 30:23 an anointing oil is described as being prepared with myrrh, cassia, and cinnamon, as well as *kâneh bôsm*, and sugarcane in no way fits the bill. It is most likely that *kâneh bôsm*, traded from long distances over the spice routes, was the concentrated form of *Cannabis*, hashish: an ideal incense. Dioscorides also called hemp a reed, undoubtedly because of its tall canelike growth habit.

Cannabis found in the burial of a young woman who died in childbirth near Jerusalem in the fourth century AD attests that the analgesic and medicinal qualities of the herb were known in Palestine. Benet's contention that the ultimate origin of the word *Cannabis* is Semitic is much less tenable. More likely candidates are Scythian or an ancient Finno-Ugric language such as Zyrjan.

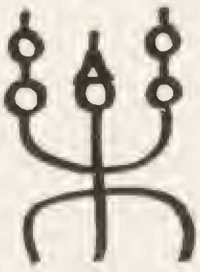
References to *Cannabis* use occur in Egyptian papyri as old as 1600 B.C.

The Chinese ideogram for hemp is *ma*^{2}, an eleven-stroke radical. The ancient form represents flayed hemp stalks hanging in a drying shed:



The etymologies of some other Chinese words are of interest. *Hemp* plus *eye* combine to form the character for "to see indistinctly," or "to gaze at longingly." *Hemp* plus the character for "spirit" or "shade" creates a devil. Disyllabic words beginning with *ma*^{2} ("hemp") are *narcotic* (*hemp* plus *drunkenness*) and *numb* (*hemp* plus *wood*). Other combinations yield the characters for "signal flag," "to feel with the hand," and (with *stone*) "to polish, to grind." Chinese also has separate ideograms for "male hemp," "female hemp," and "hemp fruits."

In Japanese, "marijuana" is *mayaku*, the kanji being the characters for "hemp" (*ma*) plus kusuri, the character for "medicine." *Kusuri* is an eighteen-stroke character that in Chinese is *yao*^{4} or *yüeh*, meaning "medicine," "medicinal herbs," or "poison." *Yüeh* itself is an interesting character, a combination of the *grass* radical with the character for "music" or "pleasure," the effect produced by music. The primitive ideogram represents a wooden table supporting a drum and two bells.



Plant poisons are herbal music, the music of the grasses.

History, China

The etymologies of the words for hemp in the languages of the people who knew her in her youth are connected mainly to the importance of hemp as a fiber, and secondarily to its visionary virtues. Likewise, the earliest archaeological evidence of *Cannabis* is the impression of hempen cords on clay pots found on

Taiwan dated at 8000 BC. The oldest piece of woven fabric in the world is a fragment of hempen cloth. The medicinal powers of *Cannabis* were recorded around 2800 BC by the great plant-doctor Shên-Nung. Shên-Nung was a great master of our Way, a man so thoroughly accomplished in knowing his ground state and being able to return to it that he was able to ingest a dozen different poisons in a single day and to discover antidotes for each of them.

Shên-Nung recognized the *Cannabis* medicine, and rated it as "superior" for those seeking immortality, i.e., the alchemical Elixir. At the same time, he warned against overindulgence, stating that taking *Cannabis* in excess caused one to see devils. Since later herbalists echoed Shên-Nung's opinion, we should consider it thoughtfully. "Seeing devils" or "communicating with spirits" is not likely to mean what the *ayahuasquero* or the doctor of the Poison Path experiences after drinking *yagé*. Shên-Nung was not a patzer: he conversed with gods and immortals. The great alchemist's warning refers to those so lost in their lunar medicines that the sun no longer shines from their eyes. This is confirmed by later herbalists who call the heavy hemp users *necromancers:* fallen shamans lost in the powers of darkness. Divining with spirits and powers is essential to the poisoner's way; all the more reason that the warning of our great teacher be taken to heart. Many Taoists consider *Cannabis* too yin to be useful in creating the Great Elixir.

How to Use If you are young, you have to learn to say *no.* If you are old, don't be afraid to say *yes.* (If you are in between, you are too busy working to get into much trouble of any kind.)

Effects A tendency to reverie.

find myself drifting
from the text
to other ideas, Dionysus, alive, in
hiding in the hemp plant, the nature
of symbology, the Great Symbol, any game
played with symbols, compared to,
compared to, which
is the essential point of symbology
anyway.

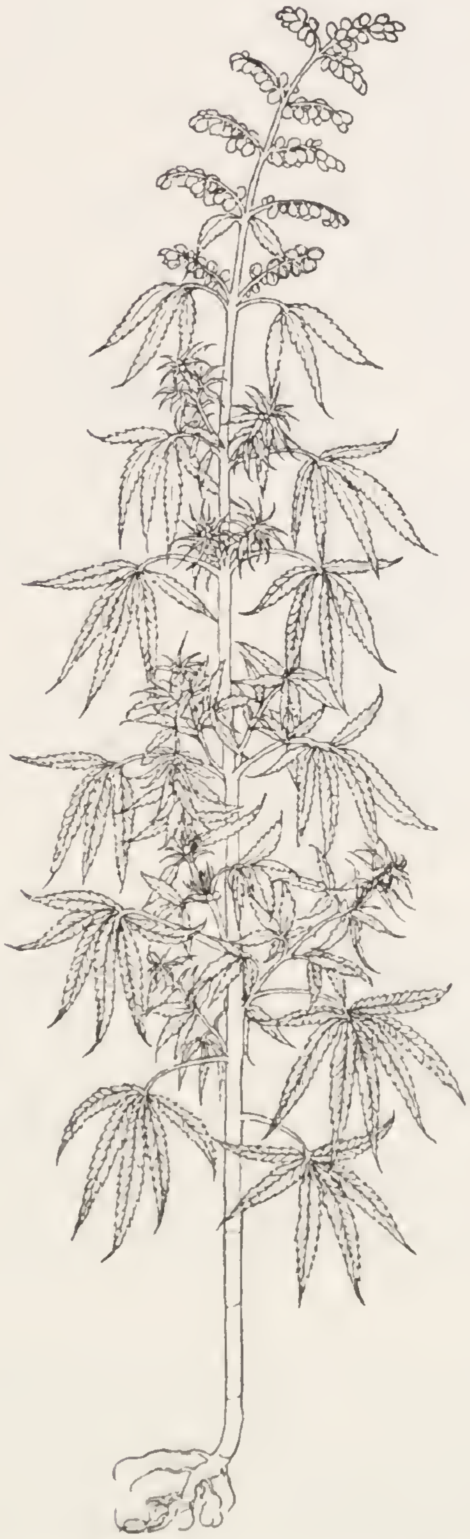
The Ally One of the great poisons given to human beings by the hemp plant is paper. Paper was invented in AD 105 by Ts'ai Lun and was made from hemp fiber and mulberry bark. Bureaucracies often are too sluggish to recognize new technologies, even one as much to their benefit as paper, and the Chinese Imperial Court was no exception. Ts'ai Lun had to indulge in a shamanly death, burial, and magical rebirth to get his poison a fair trial. Not having mastered the yogic art of suspended respiration, Ts'ai Lun used the old hollow reed trick to breathe while he was buried. His friends then burned a quantity of paper over his grave, after which he miraculously came back to life. Paper won its fair trial, and Ts'ai Lun became a favorite in the palace.

Along with stone, paper is among the most durable of mediums: gold is melted, iron rusts, but paper (excepting those of the twentieth century) endures. Ts'ai Lun, however, did not endure. When his star of favor fell, rather than face the dishonor of a trial, Ts'ai Lun dressed in his best robes and drank poison.

History, India

Hemp, *bhangá* (also *śana*), occurs in both the RgVeda and in the Atharvaveda. In the RgVeda the word occurs in reference to soma, but whether *bhangá* refers to "hemp," or to "intoxication," or to "breaking through" is not clear. In the Atharvaveda, *bhangá* is invoked with four other plants in Soma's kingdom (barley, *kusa* grass, *saha,* and soma itself) for deliverance from ill. *Cannabis* is inextricably mixed with the songs and stories of Soma. Here is one.

Once, it happened that the gods lost their powers. Indra himself, king of the gods, began wasting in decline. It is said that the curse of a wise man, a doctor and poisoner of some accomplishment, was the immediate cause. Beyond that, what sin the gods had committed that the good poisoner was able to articulate, we do not know.


CANNABIS, FROM LEONARD FUCHS'S NEW KREUTERBUCH, 1543

Vishnu agreed to help Indra recover his power. The Elixir, *amrita,* had collected at the bottom of the sea. To get it back, Vishnu told them, they must form an alliance with the demons. Only with the gods and the demons working in concert could the nectar of immortality be recovered. Vishnu added, somewhat under his breath, that he himself would see to it that the demons would never actually receive their share of the medicine.

The great alliance was formed, and the gods and demons used a mountain and a great snake, named Vasuki, to churn up the sea of the Milky Way. Maybe the poison came from the many mouths of Vasuki, as the gods and demons pulled him as a churning rope, or maybe the poison came up because of the prevarication of the gods. Whatever its cause, a great river of poison flooded over the earth and sky, threatening illness and death for gods and animals, men and demons alike. All of them called out to Shiva for help. To save the world, Shiva caught the poison and drank it, but its corrosive virulence turned his throat as blue as that of a peacock.

After that, many good things emerged from the churning sea of milk: the cow, then Varuni (goddess of wine), followed by the tree of paradise with its wonderful aromatic flowers, and finally Soma, the Moon, which Shiva grasped to wear on his forehead. Then Dhanvantari appeared, the inventor of ayurvedic medicine and the physician of the gods. He came bearing a cup of the sacred *amrita*. In the tantric tradition, the *amrita* is the *Cannabis* and milk beverage that the yogis still drink ritually today.

The *asuras* grabbed the cup of *amrita* and fled. In one story it is Vishnu who is able to recover the ambrosia, by taking the form of a voluptuous woman to distract the demon's attention and then grabbing the cup. In the Tibetan Buddhist version of the story it is Vajrapani who drinks the poison, his whole body turning blue and taking on a wrathful aspect. The demon Rahu had stolen the *dutsi*, the *amrita*, had drunk some of it, and had pissed *hala hala* poison back into the cup. The Buddhas had made Vajrapani drink the poison as punishment for losing the water of life. Vajrapani chased Rahu, caught him, and then severely wounded him with his *vajra*. Some of the Elixir then bled from Rahu's wounds and fell upon the earth, medicinal herbs growing everywhere it fell. One of the plants that sprang up was *bhang*, hemp.

Cannabis became sacred to Shiva, who was then known as Lord of Bhang. By the tenth century *Cannabis* was also sacred to Indra and was called *indraśana*, "the food of Indra." The yogis and *saddhus* call hemp *vijaya*, "victory," to commemorate the victory of the gods over the *asuras*. Shiva's blue throat became known as the "liberator." The gifts the gods gave to man in hemp were said to be courage, delight, and heightened sexual desires.

Effects

> *This will be deducted from your share in paradise.*
>
> — *Dr. J. J. Moreau, quoted by Théophile Gautier*

The Plant

She likes forests, she likes open brushland and chaparral. She likes the tropics, she like mountains. She likes Africa, Mexico, China. She likes Alaska. She's cosmopolitan: internationalism is one of her special skills. She knows how to "get around," and needs to – especially this last half century, with every border so determined to keep her out.

Effects

More humor and wit, attention to ideas and innuendo, in the conversation. Or if not, at least rapt attention while you listen. Or, if not, rapt attention for the brief moments you are attentive. Or, if not, at least rapturous inattention.

How to Use

Family gatherings are nice.

History, Europe

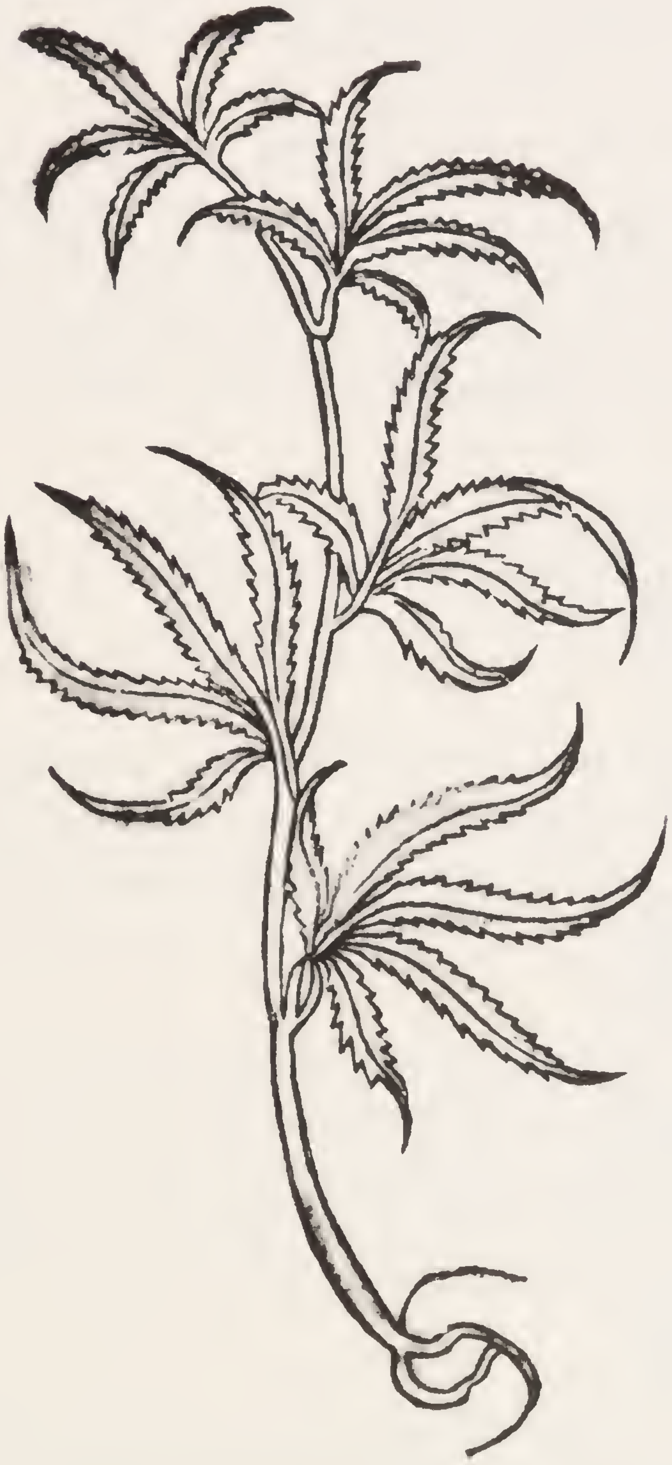
Herodotus describes the use of κανναβις by the Scythians in their funerary customs. The Scythian men would huddle in a tent, throw marijuana *spermata* (read "tops") onto a brazier, and inhale the smoke until they sprang out dancing and howling with joy. His account was much pooh-poohed until a Russian archaeologist, S. I. Rudenko, in 1929 discovered censors with hemp seeds still in them in a Scythian burial site in Siberia. He also found evidence that the smoking was not limited to men, nor to funerals.

In 1994 another team of Russian archaeologists in the Altay Mountains discovered the body of a young Scythian woman still frozen in the permafrost. The woman, being called Lady, is thought to have been a priestess. Lady's coffin had filled with water shortly after her burial, and the water froze and remained frozen for 2,400 years. She was dressed in a white hemp blouse and a red wool skirt. She has spectacular tattoos on her arms: one of a highly stylized deer, and another of an antlered griffinlike creature. She was buried with three sacrificed horses, a hand-mirror with a deer carved on its wooden back, and a box of *Cannabis*. *National Geographic* magazine, which recently published a story on Lady, forgot to mention the *Cannabis*, although they described the other items in detail.

Sula Benet points out that the descendants of the Scythians in Eastern Europe still associate hemp with the dead, and serve a soup made from hemp seeds on the Eve of Christmas or Three Kings Day. In another account, in Book I of the *Histories,* Herodotus describes a similar means of intoxication practiced by a people on the Araxes River. *Cannabis* seeds have been found in archaeological sites in Germany dated to 500 BC.

Use of hemp in Thrace is well attested, both by text and by archaeology. Plutarch's description of Thracians getting high by inhaling the smoke from hemp plants thrown onto fire or hot stones is almost exactly like that of Herodotus. The Scythian influence would have been strong in Thrace, and Scythes, though noted by Herodotus to be fiercely hostile to the encroachment of foreign customs into their own culture, freely visited and mingled with the peoples on their borders.

The philosopher Democritus was born in 460 BC in the Greek town of Abdera on the Thracian coast. Abdera had a reputation for being a city of fools, something like a Thracian *Chelm,* but Democritus, the "laughing philosopher," was not one of them. He traveled widely, making long journeys into Egypt and Asia, and devoted his life to scholarship. Besides inventing the atomic theory (along with his teacher, Leucippus), Democritus wrote books on ethics, mathematics, physics, astronomy, art, and literature. He also wrote on horticulture and herbcraft. In *Chirocmeta,* Democritus wrote of several magical plants that various authors have identified with *Cannabis*. One, the *gelotophyllis,* or "laughing leaves," causes laughter and mental phantoms when ingested with myrrh and wine.



CANNABIS, FROM PETER SCHOEFFER'S GERMAN HERBARIUS, 1485

Ephippus, a fourth-century BC comic poet, includes hemp seeds in a list of desserts in his play *Cydon*. The list includes *pyramides,* wheat and honey cakes, and may be the first reference to something like marijuana brownies. The next such reference is five hundred years later, in Galen, where he writes about hemp seed cakes. Since Galen describes overindulgence in the cakes as causing a warm and toxic vapor to rise into the head, it is clear that whole tops from the plants were used rather than only cleaned seeds. According to Galen, the cakes were eaten with other desserts to create a feeling of warmth and to stimulate an appetite for drinking. He also mentions that an excess will quench sexual potency: something many men in a state of deep stonedness, being able to find neither their penis nor even their knees, can vouch for.

The Greeks even had a word for smoking the plant: *cannabeizein* – which probably referred to its being burnt in vapor baths, or possibly as an incense. Smoke could be inhaled using hollow reeds.

The first botanical description of *Cannabis* is in Theophastus, 371–287 BC, who called the herb *dendromalache.* The medicinal properties of *Cannabis* are cited by Dioscorides and by Pliny, as well as by Galen. Still, it seems clear that *Cannabis*, while well known as a textile, was much more marginal as an intoxicant to the Greeks and to the Romans both, at least among the literate classes. Wine better suited their temperaments, and in wine there is a story.

The Return of Dionysus

> *The true living Dionysus is hiding in the hemp plant, not in the wine bottle. That is where the stranger is. And the strangeness. His vengeance on the society that today persecutes him will be to make them sacrifice their children.*

On the Poison Path, we need neither archaeology nor linguistics to recognize that hemp is one of the epiphanies of the Young God: we can spot the god's young companions by their flutes and drums, by their dancing and their tie-dyed colors. We can watch the reenactment of the ancient tragedy as we lock them away in our prisons.

Still, it is not so difficult to let one's mind wander to elder times, to peoples who used stone to carve wood and who worshipped the earth goddess and her son and lover, a long-haired, sometimes effeminate adolescent with a hard-on. Sometimes he rode a panther, sometimes he became a bull. Wherever he went people learned the powers of plants, the magic of plant poisons, and the power of intoxication in its myriad forms.

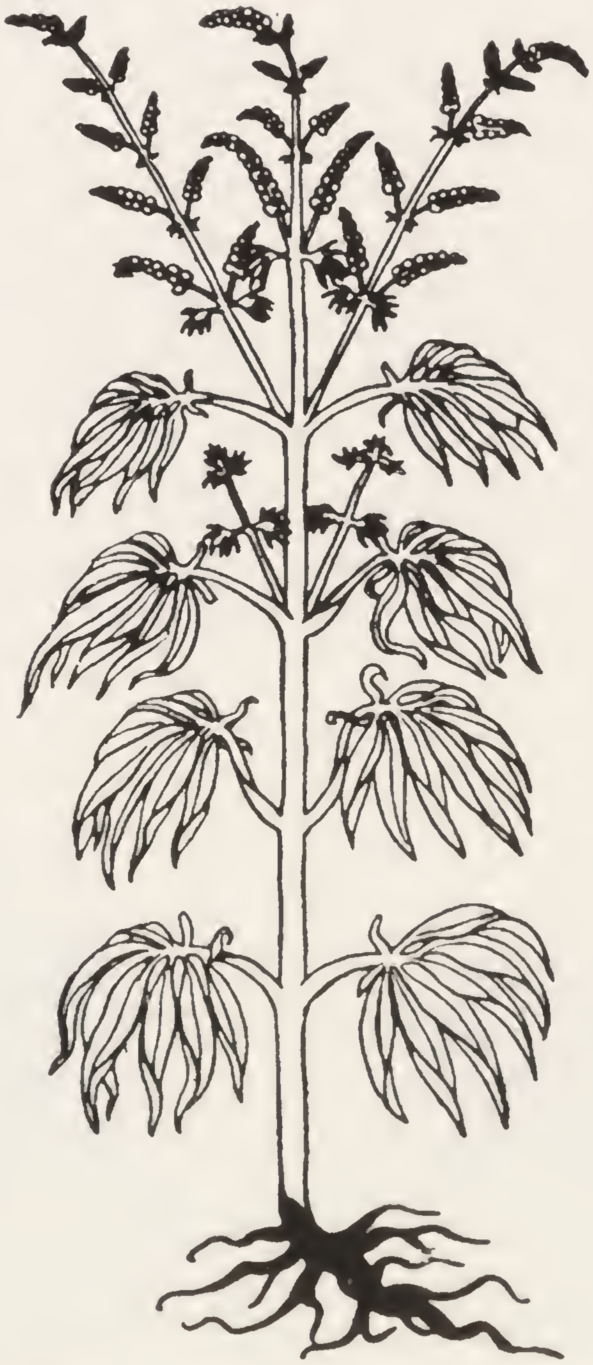
Traveling was one of the Young God's characteristics, and he acquired many names in his travels. In one part of the country he was known as the God of Nysa, Dionysus. In Egypt he was called Osiris. In another part of the world he was called the Good Omen, Shiva. Whenever the paths of the worshippers of Shiva and the worshippers of Dionysus crossed, they recognized their two gods as one.

Dionysus's home was usually assumed to be Thrace, though it may have been even further east. Thrace was the home of the Getae, whose shamans used hemp smoke to induce visions and oracular trances. Hemp probably came to Thrace through Central Asia and the Caucasus. A very similar route may have been followed by the grapevine. Georgia, at the foot of the Caucasus between the Black

Sea and the Caspian, considers herself the homeland of the vine. It is quite possible that the Western form of the god, Dionysus, carried not only the vine but ganja as well, the favorite plant of his Eastern twin.

Early Greek wine was rarely drunk neat, and was probably never just fermented grape juice. The early Greeks had no way of storing or preserving such a liquid, so they needed strong and preservative admixtures. Odysseus, in the *Odyssey,* defeats the cyclops, Polyphemus, by intoxicating him with straight wine meant to be diluted twenty parts to one before being drunk. This was true poisoner's wine, made with mandrake, opium, hemp, and henbane, with aromatic herbs and spices and resinous trees. By classical times, at Plato's symposium, wine had been considerably tamed, and needed only two-to-one dilution.

One of the names for wine was κρασι, "mixed." Another name for wine was τριμμα, "pounded." Athenaeus said that trimma was a liqueur made of spices, which was drunk by the ancients. The wine drunk during the theater season in Athens was called *trimma.*



CANNABIS, FROM DIOSCORIDES' ANICIA JULIANA, AD 512

CORRESPONDENCES

ACTIVITY	Agriculture
ANIMAL	Cat
ARCHETYPE	Jester
ART FORM	Harmony
BODILY FUNCTION	Reproduction
BODY PART	Genitals
BUDDHA REALM	Western Paradise
CHORD	Augmented 7th
COLOR	Gold
COSMIC ENTITY	Red Giants
CRUTCH FOR	Stasis
DIMENSION	3D Space
DISCIPLINE	Music
ELEMENT	Wood
FORM OF ENERGY	Biomass
FORM OF IGNORANCE	Procrastination
GEMSTONE	Emerald
GEOMETRY	Hyperbolic
GOD	Dionysus
GODDESS	Sarasvati
GRAMMAR	Language of Birds
HISTORICAL AGE	Neolithic

Effects A tendency to reverie:

Greek wines, Egyptian beers, Iakchos:
pilgrims walking to Eleusis.
Jesus the true vine and Dionysus the wild ivy.
Wine flowing from a spring, a diadem
of poppy capsules on his forehead –
the Mad One, the "Friendly Stranger":
fucks your wife, steals your daughter,
leaves death in the house.
He grows vines from the blood of kings.
He is the scapegoat we stone
on the steps of the temple.

History In the Middle East, in the Zend-Avest, Zoroaster calls *bhanga* his "good narcotic." He tells of two mortals who drank a cup of *bhanga* and ascended to heaven where they were shown the highest mysteries. *Bhanga* was the link, the connecting thread between realms.

Hemp, sweet hemp,
how long will they shun Thee?

Pharmacology The major active ingredient is Δ^9tetrahydrocannabinol. Δ^1tetrahydrocannabinol is a synonym for the same compound using a different numbering system. We will hereafter refer to this molecule as THC.

THC wasn't discovered until the early 1960s, by Professor Raphael Mechoulam, who also developed its first synthesis. Seventy to 100 percent of the marijuana high is estimated to come from THC. THC content in the plant varies greatly, from 12 percent in carefully bred, harvested, and manicured buds down to less than 1 percent. In the United States marijuana potency peaked around 1984, with an average of 6.4 percent THC by weight in dry cleaned buds. By 1994 the mean had fallen to 3.4 percent THC.

I guess it depends on where you buy.

The biosynthetic precursor to THC is cannabidiol, or CBD, and is itself often present in significant quantities in harvested hemp. CBD is a sedative and a mild analgesic, and has antibiotic properties. CBD is often called the "body" part of the high, but it is not much of a high at all without the THC. For grass to be good it has to have THC. If it has THC, it can accommodate significant amounts of CBD. Connoisseurs are able to judge the relative proportions of THC and CBD in smoked samples of marijuana by the effects they experience: how quickly the high comes on, mental lightness versus somatic heaviness, degree of sensory alteration, etc. Tastes vary. Some prefer their grass high on the THC side of the balance, others appreciate the "you're not going ANYWHERE, baby" feeling of the CBD side. Of course, the way things are today in the "free" world, where marijuana and her users are hunted out like witches, your marijuana rarely comes in a package with an analysis printed on the label, so some spirit of adventure is evoked.

On the other side of the biosynthetic divide is cannabinol, or CBN, the degradation product of THC. CBN is psychoactive, but has an order of magnitude less potency than does THC. Again, connoisseurs who have microlaboratories for analysis and lots of time on their hands love to argue about the qualities of CBN, but for most of us it just means that you kept your stash too long and that it has gone flat. That ten-dollar lid you just found under a mattress may as well stay there.

Like vitamins A and E, the cannabinoids are highly lipophilic. That is why you cannot make a good marijuana tea, unless it's buttered. In the body, THC is metabolized quickly, within hours. The metabolites, being as lipophilic as THC itself, get absorbed by fatty cells in the body, and excretion has a significant half-life. Traces of metabolites have been detected in the bodily fluids of heavy *Cannabis* users three to four weeks after their last ingestion. This does not mean that the person is still stoned, or at all impaired: the effects of these metabolites on any kind of performance has not been scientifically demonstrated.

The neuropharmacological actions of THC in the brain are very complex, affecting acetylcholine metabolism, norepinephrine turnover rates, and serotonin and biogenic amine levels. Interactions with many other hormones and enzymes are probable.

The THC receptor in the brain was discovered in the 1980s, and the receptor's endogenous ligand was discovered in 1992. William Devane, its discoverer, named it *anandamide,* inspired by his favorite philosopher, Sri Aurobindo. Devane was working in Mechoulam's laboratory, and Mechoulam is listed as a coauthor of the article that appeared in *Science*. Anandamide evidently has approximately the same strength as THC, but the comparison is based solely on things like adenosine 3',5'-cyclic monophosphate (CAMP) response in petri dishes, the contraction of a mouse's dying vas deferens, and such like. This research is so fresh and timely that new breakthroughs may be announced any day, such as structure-activity studies or synthetic twists of anandamide that are a hundred times as potent. At this time (1994) nobody even knows what anandamide does, or why the brain has such receptors in the first place. All that is known so far is that anandamide receptors seem to be associated with memory functions, higher thinking, motor coordination, and emotion. The receptors are found in many brain regions, which may explain the complexity of some of the effects of THC, and, presumably, of anandamide. Some researchers are mystified and a little embarrassed that the brain produces its own chemicals that do the same thing as "illegal drugs of abuse," such as marijuana and opium. We can only hope that the "why" implicit in their wonder is not solely pursued in the laboratory.

The Ally

Ahhhh, poisons!
Why is it we love them so?

The Plant Axes of variation: genotype and phenotype. Good seeds, not the kind they grow for rope. Country of origin, latitude, and elevation considered with respect to its proposed site of cultivation. Light, soil, pH, weather, water, and temperature. Humidity. Elevation. North-facing side of the plant versus the south-facing. Fertilizing and pruning. Time of harvesting, month, and the time of day. Skill in curing. Age. Storage.

Effects

> *Now in the primeval silence of some unexplored tropical forest I spread my feathery leaves, a giant fern, and swayed and nodded in the spice-gales over a river whose waves at once sent up clouds of music and perfume. My soul changed to a vegetable essence, thrilled with a strange and unimagined ecstasy.*
>
> *– Fitzhugh Ludlow, The Hasheesh Eater*

The Ally The ally can be a good reading companion. Attention to dosage is important. If there is a lot of the ally there, you need something concentrated, like poetry, or philosophers in the aphoristic tradition, Nietzsche, the pre-Socratics, or maybe Buddhist sutras – something condensed, because forward motion is going to slow to a snail's pace.

But that doesn't matter, because the hand and face of the author emerge from between the sentences, and this is a lot to think about. Personality, sense of humor, his self-image, and his hidden agenda in its depth or in its superficiality are all placed on the table for the ensuing conversation.

> *Words no longer play a part. . . . The text, at whatever point you pick it up, becomes a voice, the very voice that suits it, and the man speaks behind this voice. The one who wrote it is there, of as little substance as he was, no longer given solidity by the printed character, he is there again, immediately engaged in thinking, in expressing himself, finding his way among his ideas. . . .*
>
> *Hashish as a hunting dog . . . It sees quicker than we do.*
>
> *— Henri Michaux, Light Through Darkness*

Perhaps most astonishingly, hashish even seems able to assist in reading books in languages that one hardly knows: meaning floats up from hidden roots and cognates, while the drift and gist of argument emerge from syntax of sentence and paragraph. I don't believe that this phenomenom has ever been verified scientifically, but the experience is no less wonderful, proof lacking.

Some people like the Ally as an editor and critic – for criticizing their own work – saying that it enables them to see or hear or read their work as others would.

Keeping track of everything, being able to recall it, is trickier. It's kind of like, when you're with her, your memory returns: your identity is there, your projects, your insights, all your answers – except that you are in no shape to make use of them. You have to wait until the next day, when you can lift a pen again, when you can consider the insights at subsonic speed. Unfortunately, perhaps diabolically, the next morning the insights tend to fade away, waiting until you visit the goddess again to reappear.

I keep a pencil handy, as well as my pen, with soft B leads that don't scratch. Shelley wrote all over his Shakespeare folio in pen.

Effects

Of all that Orient lands can vaunt
Of marvels with our own competing,
The strangest is the Haschish plant,
And what will follow on its eating.
— John Greenleaf Whittier, "The Haschish"

Many stories are quite wonderful: tales of insights achieved, blockages cleared. One guy I heard of gets all of his writing done in three months on grass and then quits smoking for the rest of the year. How do you figure it? Someone else smokes and watches TV a lot. It's mostly like a magnified subset of what you usually do, some part of what you usually do anyway, just that you are doing it high.

Several millions of Americans of all classes use this plant regularly, year after year and decade after decade with no grave ill effects. That's just a fact. The tars are the most damaging part of the smoke, but thanks to the public-spirited efforts of marijuana breeders and growers, much less smoke is required today than, say, twenty years ago. Moreover, were it not for misguided laws against "drug paraphernalia," people could have access to inexpensive and efficient filters to further reduce the toxicity of the smoke.

Still, some damage and harm are inevitable in any endeavor. Let's get together and figure out what the problems are, where the harm comes from, and try to find some way to mitigate the damage. Unfortunately, you have a "moral" problem yourself, so you're not interested in helping. You are only interested in punishing.

The Ally

Cannabis is a great potentiator: it enhances and synergizes with many other medicines – almost anything, it seems. Interaction of THC with ether is documented. Researchers report that *Cannabis* enhances the effects of nitrous oxide, and also of *Salvia divinorum*, especially on the Bridge of Smoke. Some even like marijuana as a way to come down from psychedelics.

When engaged in the psychoanalysis of an ally, however, one must be careful about mixing, as the sum is often greater than the parts. At the same time, the *Cannabis* ally has a way of masking the effects of certain other poisons, especially alcohol, and probably cocaine, enabling or even encouraging excess. Some evidence suggests that marijuana and alcohol together impair driving skills more than the alcohol would alone. Many drug fatalities are the result of mixing multiple poisons.

CORRESPONDENCES

IMAGE	Ships with Sails
LANDSCAPE	Mountains
MACHINE	Calliope, Organ Grinder
METAL	Copper
METAPHOR	Lake
MINERAL	Jasper
MUSICAL INSTRUMENT	Guitar
MYTH	Bacchae
MYTHIC HERO	Coyote
NUMBER	Integers
OCCUPATION	Farmer/Smith
OUT-OF-BODY REALM	Overflowing Joy
PERIODIC TABLE COLUMN	Halogens
PHASE OF COITUS	Fantasy/Looking
PHASE OF MATTER	Supersaturated
PHYSICAL CONSTANT	Hubble Constant
PLANET	Venus
POISON	Diffidence
PROPORTION	Harmonic Mean
QUARK	Strange

History

> *Hashish rode to Damascus in caravans, trotted horseback to Alexandria, walked on to Tangiers and Marrakesh. Hemp sailed to Jutland, smoke drifted across Africa: bangi, canna, dagga, Zanzibar, Mozambique to East Africa, Lake Victoria, Malawis, south to the Bantu, Hottentots, and Bushmen, to the Pygmies, Zulus, and through the Riamba cult in the Congo, the gourd water-pipe its inseparable companion.*

Adapted to xeric heat by resin-covered leaves, *Cannabis* made itself at home in desert mountains. Islamic reaction to hashish was mixed: from prohibition to toleration to, as with the Sufis, love. Hashish, even where not completely socially acceptable, is rarely included in the Koranic indictment against alcohol.

Hemp sailed to Europe, and to the colonies. George Washington grew it, and pulled his male plants. Credible evidence (Conrad 1993) suggests that he smoked it, and was knowledgeable enough to be able to compare it to hashish, when some came into his possession. Jefferson considered it a superior crop to tobacco, and advised his countrymen to cultivate it. By 1850 *Cannabis* was America's third largest crop.

Effects

> *When you first begin smoking it you see things in a wonderful soothing, easygoing new light. All of a sudden the world is stripped of its dirty gray shrouds and becomes one big bellyful of giggles, a spherical laugh, bathed in brilliant, sparkling colors that hit you like a heat wave. Nothing leaves you cold any more; there's a humorous tickle and great meaning in the least little thing . . .*
>
> *– Mezz Mezzrow, Really the Blues*

The Ally

> *If a man wishes to rid himself of a feeling of unbearable oppression, he may have to take to hashish.*
>
> *— Friedrich Wilhelm Nietzsche, Ecce Homo*

The *Cannabis* ally may be contraindicated for depression. It has the possibility of helping, but it may not be strong enough to get you back together, and then you will be worse off than before. If your ally can't get its job done, it falls back upon you like an enemy. Be certain that between yourself and your ally there is enough strength to succeed before you sign on. So, OK, how do you know if you have enough strength? Well, intuition maybe. Well, OK, you don't know. That's why we call it poison.

Effects

> *I returned to hasheesh, but only when I had become hopeless of carrying out my first intention – its utter and immediate abandonment. I now resolved to abandon it gradually – to retreat slowly from my enemy, until I had passed the borders of his enchanted ground, whereon he warred with me at vantage. Once over the boundaries, and the nightmare spell unloosed, I might run for my life, and hope to distance him in my own recovered territory.*
>
> *— Fitzhugh Ludlow, The Hasheesh Eater*

History The laws against marijuana use have a great deal more to do with racism and religious bigotry than with public health. The opium laws present some analogy, in that originally it was only the smoking of opium, the Chinese method of ingestion, that was outlawed, not the use of laudanum. Likewise, the first marijuana laws were directed against "Hindoos," "Syrians," and "Mexicans of the lower classes." The scientific input of pharmacists and doctors kept marijuana out of federal and military law much longer than such rational voices were able to prevail at the state level. Between 1915 and 1927 the majority of the United States passed antimarijuana laws.

1897: HASHEESH ANTICS: IT WAS A WILD ORGY

Class interest also played a part in the new drug laws. Marijuana users were viewed as being lower class as well as dark-skinned, as being ruffians and ne'er-do-wells. The fear of a general revolt from the lower classes was the nightmare shadow that no amount of gentility could completely wipe away. Perhaps the bourgeoisie could not understand how or why the poor would endure such obvious social inequity year after year without doing something about it. Evidently their own commitment to morality and the social contract was based more on expediency and self-interest than belief, and they were afraid that the "new" drug marijuana might reveal the shamlike nature of their hegemony in a revolutionary light. They feared that the "new" drug would break the thin veneer of civilized restraint and turn men with nothing to lose into desperadoes running amok: killing, raping, and pillaging – and maybe even in the "better" neighborhoods . . . an understandably frightening apparition.

All of the threads of the drug hysteria – the fears of foreigners, the religious bigotry, the worker's fear of competition, the fear of revolution – were exacerbated by the Depression. Baseless stories of "reefer madness" multiplied in the newspapers, the Hearst papers in particular. Insanity, uncontrollable sexual lust, violence, and suicide were all presented as effects of marijuana in "true" articles in the Hearst press. Hearst's paper and timber companies had recently developed a new way to bleach wood pulp for paper making. About the same time, a machine was invented for extracting the fibers from hemp, which suddenly made the *Cannabis* plant potentially serious competition in the paper business.

In 1930 the Hoover administration created the Federal Bureau of Narcotics with Harry J. Anslinger as its first commissioner. The bureau was part of the treasury department, because it was recognized that the only constitutional foundation for the federal government to involve itself in private commerce was through taxation. (The Harrison Act of 1914 was also written as a tax law.)

1923: MARIHUANA MAKES FIENDS OF BOYS IN 30 DAYS
1923: HASHEESH GOADS USERS TO BLOOD LUST

The new bureau was a response to scandals and corruption in the old bureau, the Prohibition Bureau, which had formerly been in charge of enforcing the Harrison Act. Following a Weberian law of growth, the new bureau sought greater and more terrible enemies to justify and expand its existence, and Harry Anslinger focused on the killer weed, marijuana. An ax murder in Florida by an overtly psychotic man was paraded out as a marijuana murder, because the man "had been known to buy doped cigarettes." Maybe someone remembered the Lanfray "absinthe" murders of 1905. The propaganda campaign was so transparent and outrageously ludicrous that it would have been comical had it not been successful enough to create devastating and tragic results. The Marijuana Tax Act was passed in 1937 by legislators who knew little, or even nothing, about what it was they were prohibiting.

1934: A NEW DRUG MENACE AT THE UNIVERSITY OF KANSAS
1937: THE WEED OF MADNESS

In case you think that such yahoo tactics are the quaint stuff of history, your author recently saw a full-size billboard along a freeway in Oakland, California, that said, in large letters, "Drugs can kill!" Beside this message was a pair of lips holding a large marijuana cigarette. Now listen, four hundred thousand to half a million Americans die every year from smoking tobacco cigarettes. If you search the records of centuries of marijuana use by hundreds of millions of users, you might be able to find a documented casualty somewhere, but, in spite of the many millions of dollars spent by the government in an effort to prove the *Cannabis* plant an enemy of public health, your search will not be easy!

Toxicology

The toxicity of drugs is measured by the LD50, the dose that is lethal for fifty percent of the subjects. The LD50 for *Cannabis* is unknown – no one has ever found it. In September 1988, DEA (Drug Enforcement Agency) administrative law judge Francis Young said that *Cannabis* is, "in its natural form, one of the safest therapeutically active substances known to man."

The issue of toxicity for a *poisoner,* however, is a much subtler issue, one to which we will return later. First we must consider toxicity in its grosser aspects, and consider the charges brought against marijuana by the Prohibitionists and their fellow travelers.

One of the first indictments against marijuana in the United States, and given as a reason that it should be outlawed, was that there was no other drug "that would produce the pleasurable sensations you would get from *Cannabis*" (Charles Fauns, 1911, U.S. House Ways and Means Committee, in Abel 1980). Like masturbation in the nineteenth century, pleasure alone was enough to identify the presence of the Great Tempter. It is instructive that the first three entries in the following list of the ill effects of marijuana were, indeed, also applied to masturbation.

- Marijuana produces abundant pleasurable sensations
- Incites sexual immorality
- Causes insanity
- Incites the user to commit murder
- Makes people jump from high buildings
- Makes people listen to jazz and wiggle their hips when they dance
- Leads to more dangerous drugs, like heroin.

Of these charges, only the first has withstood the test of scrutiny. That does not stop those whose business it is to spread fear from bringing back out all the other charges – does not stop them today, nor will it tomorrow.

In the 1970s it appeared that marijuana would be legalized. President Nixon's drug commission recommended decriminalization in its final report. President Carter also favored decriminalization, and said before Congress that "penalties against possession of a drug should not be more damaging to an individual than the drug itself." The ensuing backlash is a lesson in the power of propaganda. Congress held hearings to which only antimarijuana witnesses were invited, and Senator James Eastland proclaimed that the nation was undergoing a marijuana "epidemic" in which civilization would bog down under the weight of "a large population of semi-zombies." It was a replay of the 1930s.

One of the leaders of the Prohibitionist backlash was a former OSS and CIA employee, Gabriel Nahas. Nahas had worked with Lyndon Larouche in a propaganda coverup of Kurt Waldheim's war crimes (Waldheim had been a Nazi officer during World War II). When Waldheim succeeded in becoming the secretary-general of the United Nations, he appointed Nahas to the Narcotic Control Board, and placed him in charge of all United Nations grant money for *Cannabis* research. It was a controversial appointment, not only because Nahas was poorly qualified professionally, but because he had already been caught by his colleagues in presenting a fraudulent report of a marijuana death in Belgium. Nahas gave out the money selectively, and in the late 1970s a number of "new studies" began appearing, stating that marijuana was indeed dangerous after all, that it was not a "soft" drug, and that the marijuana that your children were smoking was many times stronger than whatever you may have smoked in the sixties. The new charges against marijuana were:

- It causes chromosomal damage.
- It damages the immune system.
- It causes brain damage.
- It causes decreased testosterone levels in males.
- It causes "amotivational syndrome."
- It causes damage to the lungs.

All of these alleged effects except the last have been seriously challenged if not refuted. Heavy smoking, of anything, definitely impairs pulmonary functioning.

The report of low testosterone levels in marijuana users was refuted by a follow-up study. More studies, since, have found both for and against. The decrease, however, even when found, rarely falls below the "normal" range of variation. Ditto chromosomal damage: some found some, others did not, but in no case was it dangerous.

Nahas himself was part of the team that reported immune system damage involving T-cell lymphocytes. Blood taken from marijuana users and grown in petri dishes exhibited lower resistance to disease. As with the testosterone research, some follow-up studies were able to replicate Nahas's findings, while others refuted them. No study has shown any higher incidence of cancer or disease among actual marijuana users than among a control group. On the contrary, many regular users not only enjoy excellent health but also report absence of colds.

The report of organic brain damage was so flawed that it could be called fabrication. This leaves "amotivational syndrome." I'd answer that one too, but, really, why bother? It's just too much trouble.

A much more challenging thesis is Nahas's belief that the subjective effects of marijuana are inimical to successful civilizations, whereas those of the legal drugs – alcohol, tobacco, and caffeine – are not.

The Poison Path

Method, we believe in you!
You glorified all of our ages.
We have faith in poison.
We will give our lives completely, every day.
For this is the ASSASSIN*'s hour.*

– Arthur Rimbaud, "Morning of Drunkenness"

Interestingly, Nahas cites Moreau as his reference for his summary treatment of marijuana's psychological effects. Dr. Jacques-Joseph Moreau was the founder of the *Club des Hachichins.* The purpose of the Hashish Club was to investigate the nature of madness, using hashish as a psychotomimetic. It was Moreau who gave hashish to Baudelaire and Gautier. Balzac and Flaubert also both attended meetings of the club, at least as observers. All participants were required to keep notes.

Moreau discovered a correlation between the effects of increased dosages of hashish and the progressive stages of mental illness. This evidence led him to the belief that mental illness was not a matter of physical damage to the brain, the current belief of his time, but that mental illness was chemical in nature. No finer application of the *poison way* had been recorded in European history, at least since Paracelsus. How Nahas is able to read the work of those gifted doctors and conclude that the Ally, if not imprisoned or destroyed, will bring about the collapse of Western culture is appalling.

> *It is right then, that sophisticated persons, and also ignorant persons who are eager to make acquaintance with unusual delights, should be clearly told that they will find in hashish nothing miraculous, absolutely nothing but an exaggeration of the natural. The brain and organism on which hashish operates will produce only the normal phenomena peculiar to that individual – increased, admittedly, in number and force, but always faithful to their origin. A man will never escape from his destined physical and moral temperament: hashish will be a mirror of his impressions and private thought – a magnifying mirror, it is true, but only a mirror.*
>
> *– Charles Baudelaire, The Poem of Hashish*

The Ally

The Ally plays over the day's tape, and tomorrow's tape. The Ally fills in appropriate blanks, brings up pointed questions, can prompt you to resolutions. That you rarely keep these resolutions, especially if one of them is about laying off the Ally for a week or two, in no way detracts from their truth.

Sometimes things can get silly.

Effects

> *Suppose you're the critical and analytical type, always ripping things to pieces, tearing the covers off and being disgusted by what you find under the sheet. Well, under the influence of muta you don't lose your surgical touch exactly, but you don't come up evil and grimy about it. You still see what you saw before but in a different, more tolerant way . . .*
>
> *– Mezz Mezzrow, Really the Blues*

How to Use

So much depends upon dosage. So much depends upon intent. So much depends upon context.

> *I take haschisch with some followers of the eighteenth-century mystic Saint-Martin. At one in the morning, while we are talking wildly, and some are dancing, there is a tap at the shuttered window; we open it and three ladies enter, the wife of a man of letters . . . caught in our dream we know vaguely that she is scandalous according to our code and to all codes, but smile at her benevolently and laugh.*
>
> *– W.B. Yeats, Autobiography*

One plant person I know said, "Smoking it occasionally makes you wise; smoking it a lot turns you into a donkey."

The Ally

Like the *ska Pastora* ally, the *Cannabis* ally can assist with augury. In fact, that is one of its greatest strengths. But the euphoria is very seductive. The *little leaves,* they are for professionals: who would keep doing that for pleasure? But the ganja ally soothes. In her palace she presents you with many delights: pleasant sounds and bright colors, graceful movement, hilarity and poignancy, all of which can distract the aspirant from the true goal – the Queen herself.

The Queen is the vatic whispering of crossing branches in a tree, knots in the warp of time where the obvious no longer hides beneath the expected. She can advise you. Usually fairly soundly, in my experience. Still, as with any ally, it doesn't hurt to follow the custom of the Persian kings and to wait for a second opinion in the light of the next morning.

Marijuana and the Poison Path

We have noted the absence of marijuana fatalities, and the relative pharmacological safety of the plant. But as doctors of the *ancient art,* just as we are not deterred because a particular poison is fatal if used incorrectly, neither are we impressed nor lulled because another poison is subtle and sweet.

> *I was even all dressed in my biking clothes; smoked some bong and never left the house.*

Skilled poisoners avoid habits. Many have dropped *Cannabis* from their pharmacies completely, others limit their partaking to special occasions. We are (most of us) not *saddhus.* Our governments and neighbors ban nudity as well as *Cannabis.* We know the feeling of "morning fog" – a dullness in the morning. We know that she who gives dreams also takes them away. We know about quitting.

> *It was like two weeks of PMS.*

The *Cannabis* ally has a way of pretending that she's not doing anything. One psychedelicist told me that he was taking Prozac and had quit all other drugs – his daily marijuana evidently not counting. In truth, experienced ganja smokers adjust and lead quite ordinary-looking and often successful lives. They write books, they play music; they sell real estate, and they sell corporations. Some practice law and others practice medicine. They design computers and they build houses; they teach and they preach.

> *Then there are the brain surgeons and the airplane pilots . . .*

Some of them get high every day. But just as tobacco and heroin habitués need their ally to feel normal, so the hemp smoker can confuse his intoxication for the *ground state* – a mistake the doctor of our lineage ought never make.

> *He who has recourse to poison in order to think will soon be unable to think without poison.*
>
> – *Charles Baudelaire, Artificial Paradise*

Some of the confusion is the result of governmental propaganda that declares any and all use of *Cannabis* to be abuse. Even novices of the Poison Path know that this is nonsense. But with so many preposterous lies being disseminated the real boundaries tend to get lost. Socialization creates boundaries, but the socialization must be based on actuality. No one who begins the day with a drink can long deny that he has an alcohol problem. But how many pot smokers who start out every day with a joint think that they are abusing marijuana?

> *Nobody will acquire the habit but the destined drug-slave; and he may just as well have the hashish habit as any other; he is sure to fall under the power of some enchantress.*
>
> – *Aleister Crowley, "The Psychology of Hashish"*

Thus spoke the famous drug fiend, the "wickedest man on earth."

Chemistry

The principal active ingredient in marijuana and hashish, Δ^9tetrahydrocannabinol, oxidizes into cannabinol, CBN. The degradation rate is increased by heat, light, and air. Hashish that is three or four years old will have little THC remaining in its outer layer, though the inner part of the ball may still be potent.

In fresh material, almost all of the THC is present as tetrahydrocannabinolic acid: THC.COOH. This form of THC is inactive. It must be decarboxylated to THC by drying and heating. Pyrolation accomplishes the decarboxylation, as does cooking. Eating fresh marijuana will produce little effect. THC.COOH can be decarboxylated by heating it on a cookie sheet in a preheated oven for five minutes at 200°F or for ten minutes at 120°F.

The base form of THC may be extracted and concentrated into hash oil with any number of solvents, such as acetone, alcohol, hexanes, or methylene dichloride. Evaporate the solvent to recover the oil. If alcohol was used as the solvent, the oil may be redissolved in a nonpolar solvent such as petroleum ether and the polar compounds washed out with water in a separatory funnel or its equivalent.

If the hash oil is high in CBD (cannabidiol), the CBD can be "isomerized" into THC by dissolving the oil in anhydrous ethanol or methanol, adding a drop of concentrated sulfuric acid for each gram of oil and refluxing over a water bath. At 100°C the reaction takes about two hours. When the reaction is finished, dilute the alcohol with an equal quantity of water and extract the oil with petroleum ether or hexanes.

Effects A certain sallowness. A dullness that verges on the sultry. A gradual erosion of confidence, and argumentiveness resorted to as a defense.

That mostly all disappears after a few weeks of abstinence: a ruddy vivaciousness returns and the world starts looking better and life seems easier.

How to Use, Asthma Tetrahydrocannabinol is a bronchodilator, and some studies, as well as anecdotal evidence, suggest that marijuana smoke, or, perhaps better, a marijuana aerosol could be effective against asthma. High-quality pot would reduce the amount of smoke required, as would pot doped with hash oil. We hope that some other country that has left it to science rather than to the police to determine whether or not marijuana has medicinal benefits may provide asthma sufferers with more research in this promising area.

Poesis A fine recipe for hashish fudge is in the *Alice B. Toklas Cook Book*. Alice says that the fudge

> *might provide an entertaining refreshment for a Ladies Bridge Club or a chapter meeting of the DAR. . . . Euphoria and brilliant storms of laughter; ecstatic reveries and extensions of one's personality on several simultaneous planes are to be complacently expected. Almost anything St. Theresa did, you can do better . . .*

Recipes for hashish or marijuana brownies abound. The one and only crucial step is the making of the ghee, the hash butter. Once you have ghee, you can make anything that uses butter, even buttered toast. One stick of butter to an eighth of an ounce of marijuana is a satisfactory rule of thumb. Sauté the herb in the butter over medium heat, then strain out the remaining solids.

Attention to dosage is important. It is easy to overdo it, and even veteran heads do not always find that experience to be pleasant. And take care that the brownies (or cake, or whatever) are not eaten by naive innocents. I know of one case where a group of siblings with their families were visiting their teetotaling minister father over the Christmas holidays. Someone had baked a batch of particularly strong dope brownies, and was in the act of passing them around to the brothers and sisters when their ministerial father, who had a sweet tooth, walked through the room. Seeing the brownies, he quickly ate several, definitely more than two, before anyone could think of a way to stop him. He then retired to his study to prepare for the upcoming Christmas Eve service, which was beginning shortly. His children awaited his return with not a little apprehension.

Fortunately, all turned out well. The pastor returned home beaming, exuberant over the service, exclaiming how the "spirit" had been there, and how it was just about the best Christmas Eve service he could remember.

Effects Patterns emerge: visual patterns, larger structures and conversations in music, insights into others, and insights into self. Sensory enhancement: new tastes, new sounds, colors with a spiritual glow.

High weirdness. Things happen most uncannily. Paranormal phenomena: out-of-body experience, synchronicity to the point of seeming telepathy.

Sex is affected also: other worldly, this worldly, her worldly, his worldly, one-worldly. Two voices singing one aria, creation and improvisation in one long, stretching, eternal now. Tactile sensations exist in their own space: accessible to both but owned by neither. Genitals and other bodily parts expand, become the whole body, the two of you climbing over them like Lilliputians.

How to Use FIELD REPORT: A STUDENT

> *I used it to learn organic chemistry. If I memorized the reactions both straight and high, they stuck and I never forgot them.*

Effects The experience of a lively pot party – everyone talking with great animation, the conversation filled with colorful non sequiturs and nobody noticing or caring – can be disconcerting to the uninitiated. Sentences begin with one subject and end with another. People saying opposite things congratulate each other in agreement. For those already inclined to blather, marijuana is a gift from God: it encourages one's strong point and simultaneously quiets the critic among the listeners.

The Ally For some, it's a social animal. For others, it's like salt to sprinkle onto canned entertainment, to make it tasty. For some, it's just an everyday fact of life, a crutch they've used for so long they can't imagine life without it.

How to Use Experienced potheads are able to adjust and drive automobiles convincingly. Results of tests for impairment have remained ambiguous in spite of tremendous political pressure to find against the herb. Doctors of our Way, who have, alas, outgrown the protection of the special angels who watch out for the young and foolish, avoid driving under any sort of intoxication if at all possible.

Pothead skiers and snowboarders generally favor smoking up while on the lift, though a significant minority condemn the practice as dangerous to self and others. In any life-threatening situation, such as skiing, rock-climbing, surfing, or diving, it seems obvious, O Young Men and Women of the New Age, to weigh the risks most carefully. Few of you will, I fear.

The Ally Some doctors prefer to take it alone, to socialize with their thoughts, with a book, or with nature.

Poesis The cannabinoids can be extracted from the herb or from the resin with alcohol. If the herb is used, it should be briefly baked to complete the decarboxylation of the THC. Cold alcohol will extract adequately in two or three weeks. Refluxing will do the job in a hurry. The tincture is sometimes called "green dragon."

The Ally *Cannabis* demands flexibility, but not morality. Hypocrisy passes the gates freely, larceny giggles as it steals. And, though it may take a special effort, the violent can still crack heads. It has long been a favorite of soldiers.

Effects FIELD REPORT: A SUCCESSFUL REAL-ESTATE BROKER

> *I smoked it every day for twenty-five years. It gave me confidence. I never got sick, either. It was when I quit that I started getting colds.*

How to Use, Insomnia *Cannabis* can cut both ways in matters of insomnia: the excitement of the mental effects act as a stimulant to some. Still, many users report that they take marijuana to sleep. Recent studies suggest that the cannabidiol, CBD, is the hypnotic part of *Cannabis*, and therefore those desiring a sleeping ally (and there are many) would do well to seek out high-CBD strains of *Cannabis indica*.

Effects That astute and intrepid *poisoner* Aleister Crowley investigated hashish carefully. Crowley, much like Baudelaire before him, described three effects of hashish: the "volatile aromatic" effect, the "toxic hallucinative" effect, and the "narcotic" effect. Of the first, Crowley says:

> *One is thrown into an absolutely perfect state of introspection. One perceives one's thoughts and nothing but one's thoughts, and it is as thoughts that one perceives them. Material objects are only perceived as thoughts; in other words, in this respect, one possesses the direct consciousness of Berkeleyan idealism.*

It is in this stage that Crowley concentrated his work: preparing himself, finding minimal doses, extending the meditation as long as possible, etc.

At a higher dose, he describes the second stage, the "hallucinative" effect, where the images of thought pass so quickly that they appear to be external instead of internal.

> *The Will and the Ego become alarmed, and may be attacked and overwhelmed. This constitutes the main horror of the drug; it is to be combated by a highly – may I say magically? – trained will.*

In the "narcotic" effect, he says, one simply goes off to sleep.

In "The Psychology of Hashish," published in the *Equinox*, Crowley attempts to map the insights and experiences of hashish to the five Buddhist meditations on the *skandhas*, perceptively noting where they coincide and where they differ, and with consummate integrity clearly states where his own knowledge ends and speculation and hearsay begin.

> *As I said, there is but one remedy; we are all more or less subject to this wandering of thought, and we may all wisely seek to overcome it; that remedy is to train the mind constantly by severe methods; the logic of mathematics, the concentrated observation necessary in all branches of science, the still more elaborate and austere training of magic and meditation.*

The Ally Potheads and lushes are like cats and dogs. The cat, cool and composed, awareness bristling out like fur, watches the dog jumping up and down, tail wagging in dissolute abandon, tongue hanging and dripping idiotically, sees the whole creature huffing and puffing like some huge oaf. All the dog knows is that if that smart-ass cat ever forgets to look over his shoulder he's going to lose a mouthful of fur.

Effects It can inhibit dreaming. Some war veterans take it to stop their bad dreams.

CORRESPONDENCES

QUANTUM FORCE	Photon
REALM OF PLEASURE	Oral/Lips
RITUAL EVENT	Confirmation
ROCK	Serpentine
SENSE	Hearing
SEXUAL POSITION	Indescribably Intricate
SIGN	Draco
SIN	Gluttony
SOCIAL EVENT	Arrest
TAROT KEY	Magus
TIME OF DAY	Midmorning
TOOL	Tripod
VIRTUE	Tolerance
VOWEL	Low Back, ɔ

Marijuana and Civilization According to James A. Munch, who worked closely with Harry Anslinger for many years, Anslinger worked so diligently to try to arrest leading jazz musicians in the 1940s because he felt that they were "role models" for young people. But beyond that, he didn't like jazz and considered it degenerate. He once wrote in a memorandum that swing had been invented by a pot-using musician, and he didn't like swing. In Munch's words, the effect that the musicians were after from marijuana was a lengthening of their sense of time, so that they would be able to put more grace notes into their music than if they simply followed the written score. Munch complained that a regular musician would just play a piece of music the way it was written, but that a musician who used marijuana would work in about twice as many notes, would "jazz" it up.

> *fearing change, they grasp the letter*

And we remember Lyndon Larouche campaigning against rock 'n' roll.

> *Employers fear change in their workers, governments fear change in their citizens, churches fear change in their parishioners.*

Change in the order, the order that is written and dependable. They don't play it the way it's written, and are therefore much worse than the ordinary criminal: they are heretics and blasphemers. The War is a religious war.

> *Casual drug users should be taken out and shot.*
>
> *– Daryl F. Gates, Los Angeles Chief of Police, to Senate Hearing, 1990*

How to Use, Medical Uses

Marijuana may be the most effective antinausea *pharmakon* known. For some people it is the only effective remedy against epilepsy. *Cannabis* is effective in treating glaucoma and is useful in the treatment of multiple sclerosis. It seems to be the only relief for certain kinds of chronic intense pain, pain that is not relieved by morphine.

For people with AIDS, and cancer patients undergoing radiation or chemotherapy, marijuana can be a savior, relieving nausea and stimulating the appetite. The obstinancy of the United States Drug Enforcement Agency in insisting that marijuana has no medical value reminds one of the priests who refused to look through Galileo's telescope to see the mountains on the moon.

> *The whole earth is in Revolution.*

SHEN-NUNG

Many women find marijuana an ideal medicine for menstrual cramps. The use of marijuana as an aid to childbirth was attested to at least sixteen hundred years ago. Marijuana's usefulness in mood disorders needs to be explored with the same scientific and psychiatric methodologies that were given to Prozac.

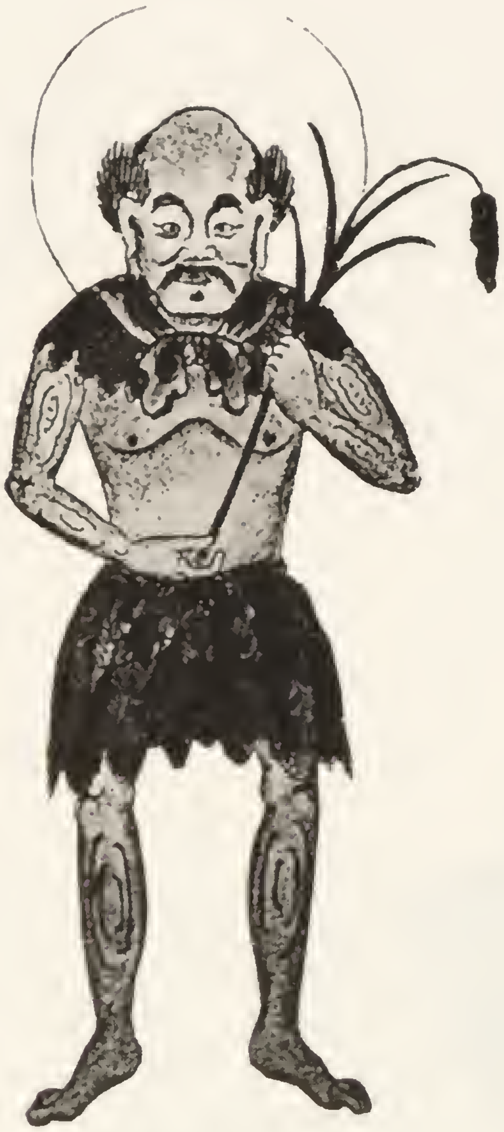
No poison is risk-free. Still, two thousand people die each year in the United States from aspirin, and that is two thousand more than die from marijuana.

The Ally

> *It puts just a little different perspective on things, and that little shift is enough to break out of a brooding cycle, that something that seemed big is not overwhelming. I get some distance, then I can deal with it.*

Effects Confusion and paranoia. Many quit the Ally for this reason. Many who don't, should. Especially young people who haven't developed their solar medicine. The answer is the judo way, to back off, to hit it from the side instead of head-on. Back off, come down, limit your dosage and your situations. Learn to say no. Be a doctor of the Poison Path and observe from the outside for a change. Learn something about *ground state training.*

Poesis Bhang is a relatively mild beverage, offered to Shiva by pouring some over his lingam, and by being drunk by his devotees. Shanta Sacharoff, in *Flavors of India,* gives this recipe.



SHEN-NUNG

2 cups water
1 ounce marijuana
4 cups warm milk
2 tablespoons blanched, chopped almonds
1/8 teaspoon garam masala (cloves, cinnamon, cardamom)
1/4 teaspoon powdered ginger
1/2 to 1 teaspoon rosewater
1 cup sugar

Pour the boiling water into a teapot and steep the marijuana for seven minutes, strain through muslin, squeezing out as much water from the herb as possible. Set water aside. Grind the herb in a mortar with two teaspoons warm milk, squeeze the milk out into a bowl. Repeat four or five times until you've used about 1/2 cup of milk. Add chopped almonds to the herbal mass and grind as before with more warm milk. Squeeze as before. Repeat several times and then discard the pulpy remains. Combine milk and water and add garam masala, dried ginger, rosewater, sugar, and the remaining milk. Chill and serve.

The Ally It fills me with cravings.

Effects FIELD REPORT: A MAN, A FORTY-YEAR-OLD JEWELER AND SCULPTOR

> *Cannabis has always been a mixed blessing for me. It is great for shaking out the cobwebs and mental constructs that my mind digs, allowing me to jump out and see a greater view, yet if only I could remember those great realizations! If I repeat the ritual, I just fall deep into another rut which seems to brings my daydreams forward, robbing my slumber of dreams, and all need to actualize anything is moot, because it has already been seen and passed on to another daydream. I think it can be a big trap, perhaps more suited to those who are mega type A and need forced relaxation of their drive.*

The Ally A struggle with despondency, which the ally begins to be a part of. Solar medicine is important. Physical exercise, some kind of physical training regimen helps immensely. If it gets bad you need to clean up. The ally itself will tell you to lay off. But it's hard to remember that the next day. After she has already said that a bunch of times I think she stops trying. Sometimes a new ally can help.

How to Use, Migraines Substantial anecdotal evidence claims that marijuana can prevent or decrease the frequency of migraine headaches. The great William Osler concurred, stating that *Cannabis indica* is probably the most satisfactory remedy for migraines available. The medicinal virtues of *Cannabis* were much more widely known and employed in the late nineteenth century than in the late twentieth century: consider the loss as "collateral damage" of the War on Drugs. Users claim that marijuana works best as a preventative, that once the migraine begins, it is too late.

Effects FIELD REPORT: A MAN, A FIFTY-YEAR-OLD PROGRAMMER AND POET

> *I smoke it in the evenings but not usually at work, unless I'm designing, working on architecture. For organizing the big picture it's great, but it is not good for details. Once I got high with a friend at lunch and then found out that I had to spend the afternoon debugging hexadecimal. That was a nightmare.*

Ally, the Poison Path We are all intoxicated. We were born into an insane asylum, a world crazy-making. We believe what we see and hear. The real myth is the myth of sanity, of rationality: it's a disease that is eating away at the earth. All the poisons flow from our denial. We deny our madness, we forget our crimes, we dismember the corpse, we imprison our children. We need poison to poison the poison, to remember the sacred nature of intoxication, the green body of the young god.

The Plant *Cannabis* will outlast us. It will colonize the empty scars we leave behind us.

The Ally

> *It began with the laughter of children . . .*
>
> *– Rimbaud, "A Morning of Drunkenness"*

DIE GIFTKÜCHE

Poetry as a Way: animating the plant is folly, but letting the plant animate you is wisdom, to paraphrase Dōgen.

We are in Hell's Kitchen here – dark alembics bubble their poisonous fumes. With powerful acids and reductions the flux crystallizes: a temporary energy well. To be cleaved in the mind.

Knowledge is evil. "Wise as serpents." Angels with minds like knives, prideful and satanic. Rebellious. Religion relegated to faith, fruits and berries left to the Devil. The Protestants open a secret door for alchemy but still execute "witches."

Lost in substances. Materiality triumphing over spirit, the poison as empire.
When "just this" reduces to "merely this."

What's going on? Are these atoms immoral? Naked shapes and seductive twists, acetylating, Mara dancing, Maya dancing, Shiva.

Jesus is of course a *pharmakos.* Who gathers up all the poison of the world and takes it with him to be nailed to a cross where it can no longer harm us. Or so He thought. A powerful sorcerer. It is said that if you believe in Him you are freed of all those poisons He placated by returning them to their Father.

He is the Salamander, born of fire and tempered in fire,
baptized in sulphurous fumes.
We burn him as a heretic.
He absorbs the poison and acquires a many-hued patina:
a peacock's tail shining like the Moon-Crested's throat.

One of the poisons the Savior took with Him was Moral Law, that the world might be free for Love. But someone removed a nail, and Moral Law is preached again. Never believe *all* of the claims of *any* sorcerer.

We live in a state of intoxication already. Like revelers drunk on mandrake,
we believe what we see. Dreams and reality intertwine. Seeing phantoms,
we destroy cities, lay waste entire countrysides.

We deny the god, that he has come, and loose poisons upon the world. A war of poisons. Fighting is the nature of poisons. We deny their sacred shrines within our bodies and they pour out upon the world. To tame them you must name them, and be able to call them.

His venom becomes the great Medicine.
He quickly consumes his venom,
For he devours his poisonous tail.
– The Book of Lambspring

You have to recognize the poisons to be free of them. They are ethereal, but certainly related to molecules in a most odd, surprising, and natural way. Pharmacology is close to the atomic level – so that a great deal of confusion and ambiguity can result when poison is investigated metaphysically. Not clear that's a bad thing, of course.

On the other hand, if the tryptamine won't cross the blood-brain barrier, why not stick a methoxy group onto the phenyl side, maybe at five, to reduce the polarity? And while you're at it, add a methyl group to that alpha carbon to hide the amine. Even monoamine oxidase might be fooled.

Subtler poisons are so pervasive that their scale is global or universal – yet they operate in history. No need for quantum mechanics here – or for an excursion into materialism, be it ever so mystical.

The alchemical retort, the alembic:
pharmacy, drug laboratory. We sit,
watch our breathing, or run, eat, make love.
We eat leaves, we burn leaves, we grind seeds
and ingest them. We move atoms, alter
wave functions. Terrible smells of corruption.
Books of formulae. Books of verse.
The poisoner's workbench.

There are many poisons about. Often they enter us unbidden and unnoticed. The subtlest poisons can live within us indefinitely, like quiet parasites. (Tobacco, to cite one contrast, is so exceedingly strong and obvious that its dangers are entirely avoidable.)

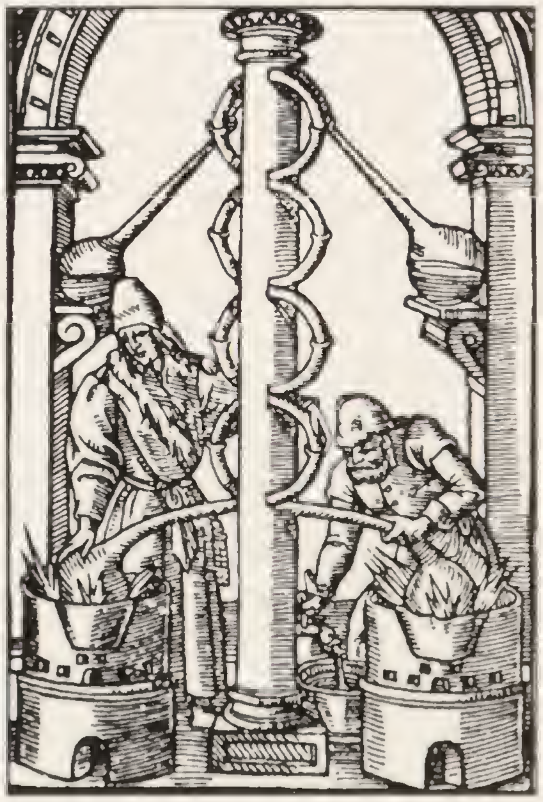
"All things contain poison," our beloved Paracelsus wrote, "there is nothing without poison."

Cigarettes, books, apples.
Windows, walls.

All poisons are potential allies.

I have drunk poison whiles he utter'd it.

– Shakespeare, Much Ado about Nothing

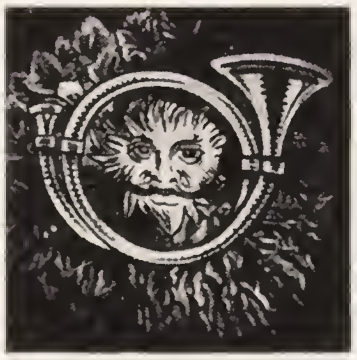


AN ALCHEMIST AT WORK

REVERIES ON THE GREEN MAN ~ MISCELLANEOUS PLANTS

Go backward. From Amazonia, *Curipira,* the Master of Animals, a dangerous spirit whom every shaman must meet and be able to charm with words and songs, must be able to bargain with. He wears no clothes, has shaggy hair, has a huge penis, has large green fanglike teeth. His green feet are attached with the heel in front. So track backward.

To a tavern in England, green face on the hanging sign, green hat, green Robin, Robin of the Wood. Maybe Jack-of-the-Green, the foolish son who never worked but gets the girl anyway.


"THE GREEN MAN AND FRENCH HORN," SIGN ON PUB, LONDON

Backward, then to church. Gothic arches rising from a head of leaves, a head with foliage growing from its mouth and eyes, ivy and oak, or acanthus. At Exeter there are twenty carvings of the Green Man on the interior of the cathedral. Two of them sprout *Artemisia,* beautifully intricate wormwood leaves that wrap up and around the column.

At some cathedrals the Green Man shares the tympanum with the prophets. At others, hidden behind the saints, he bears the weight of civilization on his shoulders, his stone head carved into the base of the columns and arches. Almost always, foliage grows from his mouth as well as over his face. Leaves are his words. He speaks leaves, vines, and supple stems.

Leonotis leonurus

This South African plant is known as "lion's tail,"or "wild dagga," *dagga* being a term for marijuana. The name "Lion's tail" perhaps comes from the form of the inflorescence; how the lion's ear got involved is not clear. The Hottentots smoke the resin and the flower buds. The plant contains several phenolic compounds, $C_9H_{10}O_5$, $C_8H_{10}O_5$, two diterpenes, $C_{20}H_{28}O_5$ and $C_{20}H_{28}O_3$, and 0.4 percent marrubin oil.

Leonotis leonurus grows easily from seed, and will grow to more than two meters in height. In the mint family, the plant has the opposite leaves and bilabial flowers characteristic of the Lamiaceae. The flowers are orange and quite beautiful, and wild dagga is now grown mostly as an ornamental. A decoction of the leaves is used as an emmenagogue and purgative in Mauritius. In South Africa the decoction is used for a wide variety of conditions, both external and internal, including asthma.

My compatriots and I have tried to substantiate the reported narcotic and inebriating effects of the smoke with mixed, mostly unspectacular results. One plant person, however, found the smoke very relaxing and "clarifying."

◑

Backward, Roman masks, Bacchus. Bakta. Bakti. A path with heart. Shiva, perhaps.

Hang out at the theater, but not with the comedians. Hang out at the Mysteries: Dionysus and the Great Goddess, traveling together. Child of the Great Mother, god of wild earth, with snakes in his hair; the conqueror whose armies bear flutes and green staves, *virga,* defeating all opponents with love and dancing. Women wearing ivy leaves, women nursing wolf cubs at their breasts.

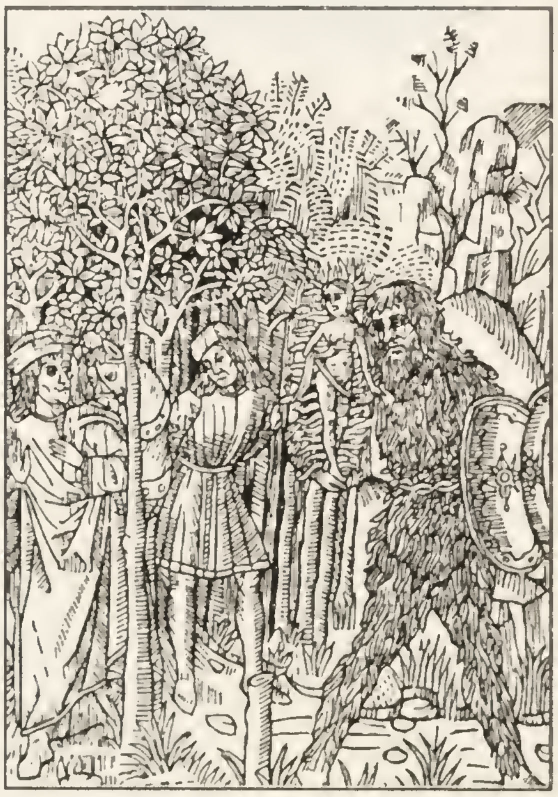
> *Hirsute, the Hairy Man. The Wild Man.*
> *Der Wald: forest. Sylvan. Savage.*
> *Green is Osiris, whom we remember.*

The Wild Man is the Natural Man: man without civilization – he is the projection of our imagined essential nature, what we would be like without police departments to subdue us. The medieval Wild Man was considered stupid: the rationale for feudalism. You need the nobility because people on their own are too stupid to feed or clothe or house themselves. The Wild Man today is the savage: the rationale for the police state. You need the police and prisons because people in anarchy are vicious beasts, dog eat dog, man eat man. At the very least they murder their father.

But the Green Man is the projection of the Tree of Life, the life force. He is sap, fertility, semen, perhaps helpless and foolish but not stupid. He is the Natural Prophet, the Primal Word. He is creative but oddly passive. Yin-like.

A projection of essential nature without civilization and without humanity: vegetable life. Before morality. He is not the Tree of Good and Evil, he is the other tree. The Sun-Tree.

We think of Dionysus.


THE AUTHOR MEETS THE WILD MAN, FROM DIEGO DE SAN PEDRO'S CARCEL DE AMOR, 1493

> *When Laura was a little girl in Illinois, she and her friend would catch fireflies and pull off the abdomens and stick the glowing part of the bodies onto their arms and legs and the backs of their hands. They would wave their arms in the darkness, dancing.*

Dionysus, dismemberment his birth and his death. The madness he brings is not immoral, but pre-moral, a child's absorbing delight in beauty and wonder.

Dionysus as the revealer of mysteries, whose worshipers wear huge beards made of leaves. An army of women carrying musical instruments. They march toward a bloodless victory in India. Pan and Silenus both sign on for a tour of duty. The women accept them. The unconquerable army rides forward on donkeys.

Dionysus as panther, hunter. Animation, vital force. Not immoral, but amoral.

> *The cat keeps playing with the mouse. He backs off, pretends to ignore it, so that the mouse will try to run. Then he bats it, throws it around, then waits for it to revive again.*

He is the god of excess, the god of sacred inebriation, on the wild side of the fence. Jesus was the true vine, but Dionysus kept the wild ivy.

> *They planned her birthday out in detail. Not that she was new to drinking or bars: she had had a fake ID for two years. But it was a rite. They had drivers, had friends chosen to carry her when she passed out, even had the couch all made up with sheets and a blanket, with the forethought of plastic and newspapers on the rug, a vomit bowl ready, ibuprofen ready. And it happened just like that. I watched them carry her in.*

Panther, magpie, cymbals: Dionysus is the red-purple line, the way of sexuality and sensuality, the way of poisons.

> *Why are perfectly accomplished saints and bodhisattvas attached to the red-purple line (the line of passion and sexuality)?*
>
> – *Shōgen*

Don't forget that it was Dionysus gave Midas the gift of gold, the golden touch, the Great Stone. So Dionysus was a Master Alchemist. Somewhere he had a forge, and a crucible.

> *It is either under the influence of the narcotic draught, of which the hymns of all primitive men and peoples tell us, or by the powerful approach of spring penetrating all nature with joy, that those Dionysian emotions awake, in the augmentation of which the subjective vanishes to complete self-forgetfulness.*
>
> – *Nietzsche, Birth of Tragedy*

◑

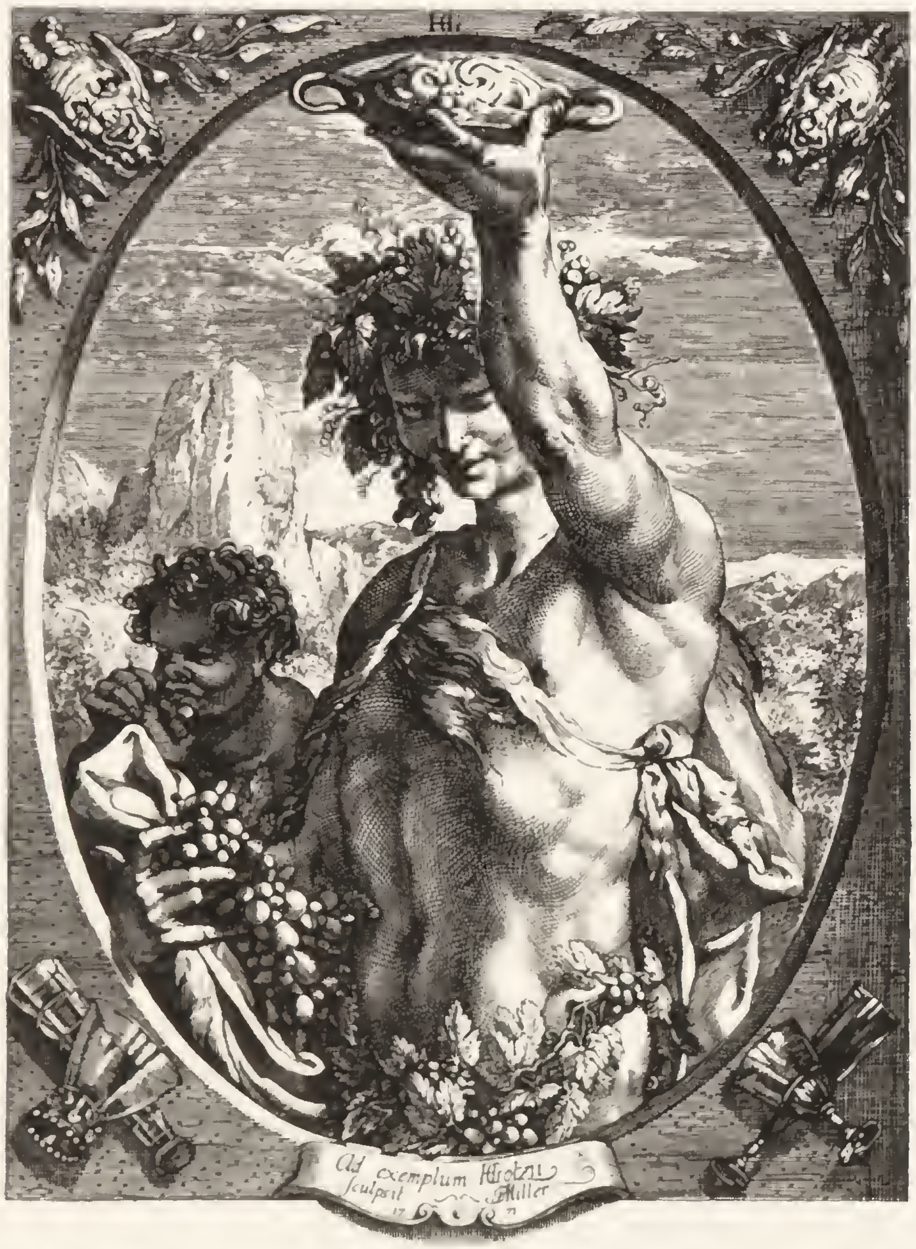
Leonurus sibiricus

This plant is called "Siberian motherwort" or "marijuanilla." According to Emboden (1979) it is smoked in Malaysia as a marijuana substitute. Díaz (1975, 1979) reports the same practice from the highlands of Chiapas. The closely related common motherwort, *Leonurus cardiaca,* may have similar properties. Motherwort is unusual in the mint family for the presence of three alkaloids. It is not clear whether or not the alkaloids are responsible for the psychotropic effects of the plants.

I find the effects to be more sedative than euphoriant, but the sedative effects are distinctive. The plant might fare better as a tobacco or after-work drink substitute than as a marijuana substitute. I would certainly add it to any herbal smoking mixture aiming in the sedating and tranquilizing direction.

◆

Green is Osiris. "L.S.", in the Birmingham *Post* in May of 1925, speculated that the Green Man common on British tavern signs is Osiris, a legacy of the Romans. If, indeed, of classical descent, the Roman Green Man was more likely Attis, the self-castrated lover of Cybele who hung himself on a pine tree. Like Osiris, Attis was green, and like Osiris and Tammuz, another form of the "dying god." The same author claims that the Axe and Bottle on tavern signs is also of Egyptian origin, the axe being a hieroglyphic symbol for divinity, and "neter," the bottle, the vessel from which Nu pours the nectar of immortality.



"BACCHUS," GABRIEL MULLER (18TH C.), AFTER HENDRIK GOLTZIUS (LATE 15TH– EARLY 16TH C.)

Osiris was the original John Barleycorn, the slain god whose body, the chaff, is scattered to the winds at threshing time. Like his mythological descendant Dionysus, Osiris also went to India, conquering by teaching art, sculpting, music, and the arts of beer- and winemaking. Osiris is sometimes portrayed with ears of wheat sprouting from him – a corn god.

The jealous Set cut Osiris into fourteen pieces and scattered them. Isis gathered them up and put them back together, but she never found his penis. His penis had been eaten by a crab. So she made one, fashioned one out of wood.

If Osiris is the flooding Nile, that which renews Isis, the land, and keeps her fertile, then Set is dryness, desertification. Set seems to be winning.

Lactuca virosa A minor sedative. Wild lettuce was once used to adulterate opium, and has long been used as an opium substitute for minor pain, cough, and insomnia. The dried latex is often dissolved in wine, or dissolved in alcohol as a tincture. The latex can also be smoked the way opium latex is, and I have reports from experienced opium smokers who have derived some satisfaction from it. The dried latex is called lactucarium, and is listed as a hypnotic, sedative, expectorant, anodyne, and diuretic. An alkaloid comprising several percent of the weight of lactucarium is called *lactucin,* and is said to be molecularly analogous to morphine. If opium is available, it is superior to lactucarium in every way I can think of.

Lactuca virosa is of European origin, but is widely naturalized as a weed in the United States. Also naturalized is *L. serriola,* the prickly lettuce. *L. canadensis* is a widespread North American species. All of these species, as well as garden lettuce, *Lactuca sativa,* contain lactucarium, though it is strongest in *L. virosa.* Wild lettuce bears a strong resemblance to dandelion, and inhabits some of the same locations. Both are in the chicory tribe of the Compositae, in subtribe Crepidinae. But the ray flowers of wild lettuce are pale yellow, or even cream or bluish, while dandelion rays are yellow. And the pappus, the fine bristles so characteristic of dandelion fall off of the wild lettuce achenes separately. Also, the achenes (the seeds) of wild lettuce are slightly flattened. Both plants have milky sap.

Jeanne Rose (1983) says that mixed with camphor and applied to the testicles, lactucarium suppresses sexual dreams. Unless she publishes her methodology, I would consider that claim to be "hearsay."

Aphrodite made a bed of lettuce leaves to bear away the body of Adonis.

◆

Dionysus as the Divine Child. Son of a single mother, a love child, like Jesus.

> *Wherever you find a lot of women together, like at the Mysteries, there is bound to be one –*

Mothers of Devouring Love and their little child gods: the darling boys who can't grow up. Some of them turn nasty. Dionysus didn't want to be like his father, became the only Olympian to stay faithful to his wife. (Just because Hephaestus never actually got it into Athena doesn't mean he wasn't guilty).

> *And I am desolate and sick of an old passion.*
> *Yea hungry for the lips of my desire:*
> *I have been faithful to thee, Cynara! in my fashion.*
>
> *– Ernest Dowson*

Black Virgins began appearing in Europe in the eleventh and twelth centuries, at the same time as the great proliferation of the Green Man. Cathedrals were often built on the sites of shrines to Isis and the Divine Child Horus. Divine Child Christ. The father hiding in the foliage.

Fir tree, yew tree, ivy, vine.

◆

Argemone mexicana

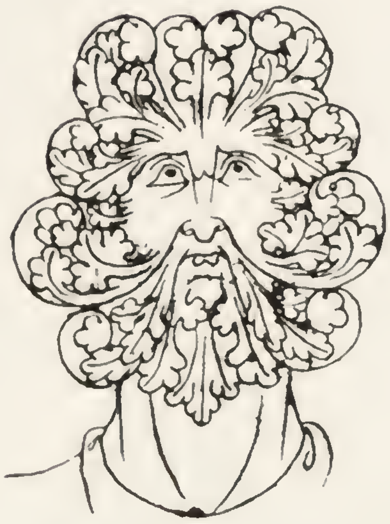
The Mexican prickly poppy, or "chicolote," is another opium substitute, as is *Argemone polyanthemos,* from the Southwest. Moore (1989) says that an ointment prepared from the latex is effective topically for sunburn, and that an infusion relieves cramping from diarrhea and nervousness from PMS or caffeine excess.

As with all such plants, care must be exercised. Cases of poisoning have been reported from *A. mexicana,* and also from a Hawaiian speices, *A. glauca,* and an Indian species, *A. alba.* All of these *Argemone* species contain isoquinoline alkaloids, such as protopine and berberine, both of which also occur in *Papaver somniferum.*

◆

The Green Man was carved into wood and stone, accepted great loads– supporting fountains, arches, cathedrals. Leaves poured from his mouth, spiraled up the columns.

He came with the May. He came bearing summer. On one portal at Chartres cathedral, there are three Green Men: an oak Green Man, a vine Green Man, and between them an acanthus Green Man. They are the wild, the cultivated, and the boundary, the between place where camp followers and the semi-domesticated plants live, the plants that have not lost all of their poisons.



GREEN MAN BY VILLARD DE HONNECOURT, A 13TH-C. ARCHITECT (PERIOD OF CHARTRES CATHEDRAL)

Many Green Man heads have a devilish appearance: a grin, a touch of foolishness, like they have an inner joke, an inner knowledge that sets them off from the demons, gargoyles, and saints. Or two heads will be huddled together, like two sages, with leaf hair and leafy beards, looking like druids, given special and privileged admittance to the Holy House. Or sometimes a mason or an architect would carve his own face as a Green Man, a worldly and human visage sharing the aloof and stylized company of the immortals.

There are some Green Women also. At Briode, there is a mermaidlike figure with her tail split to the crotch, reminiscent of *yacu mama* of Quichuan Amazonia, tails covered with branchlets and leaves instead of scales and fin.

At St-Bertrand de Comminges, a naked female angel squats and gives birth to a Green Man head. Or not quite an angel, Lilith: harpy-like, with wings but no arms, birdlike feet as in Bosch. But a face so kind and benevolent, even in the act of birthing . . .

◑

Eriodyctyon californicum

Yerba santa.

Red Barnes, the legendary recluse and hermitic prospector of Trinity County, California, called this plant "mountain balm," and added dried leaves to his smoking mix to stretch his tobacco. He also used the "camphor plant," *Salvia sonomensis,* which he said gave you "mentholated" tobacco. (He added the camphor plant to his Copenhagen snoose also, and said that it was strong enough to make him woozy.)

I drink an infusion of the leaves as a decongestant for colds. The chemistry of yerba santa is a particularly complex mixture of flavonoids and other compounds, so I don't think the herb's effectiveness is just my imagination.

GREEN MAN BY HANS WEIDITZ, 1521

Following Barnes, I frequently add mountain balm to my own smoking mixtures. I find something deeply soothing and comforting about it, but it may just be because it is one of the very first plants I ever collected, and is closely associated in my memory with so many hot days on the trail in the Trinities,

> *the pungent incense of the doug fir and the cedar; the cold streams, the water, the swimming holes.*

Smoking yerba santa actually may not be so smart: it is so full of resins, oils, and waxes.

> *Once in a while won't hurt. . . .*

Look for it on serpentine outcrops.

◑

Dionysus is poison. He is the liberator from madness and likewise the cause of madness. Heraclitus said that Dionysus was the god of death, Hades, and excused the obscene phallic songs of the worshipers because of the divine nature of their inspiration.

Dionysus is the *pharmakos,* the fertility scapegoat who descends into the underworld and brings forth spring. He is the wanderer, the hump-backed flute player, Kokopeli, scattering seeds from his pack. Or again, Cernunus, with an erect cock. Or *Amanita muscaria,* red head breaking through the vulva, foreskin stretched, a sanguinary infant at the moment of birth.

◑

Lagochilus inebrians

Another reputedly inebriating mint. Like *Salvia divinorum, Lagochilus inebrians* contains no alkaloids. The tincture is official in the Russian pharmacopoeia, used for hypertension and other nervous disorders. Lagochilin, $C_{24}H_{44}O_6$, 1 to 3 percent of the plant, is a diterpene and a sedative in humans at doses of thirty milligrams. It is unknown if lagochilin is responsible for the alleged narcotic and hallucinogenic properties of the plant.

The plant grows in Central Asia.

◆

Serotonin, dopamine

naked dancers in torchlight.

Dionysus lives in children, but we hunt him down and root him out. We demand civility, even in celebration, but the head goes on singing. We deny the god. We legislate and stigmatize. We go mad.

We deny our own intoxication. Opposite of remembering, we forget. We deny the sacred nature of inebriation, see only the profane and thus deny the spring. And so we dismember. We kill and analyze: lyse. Like the crab, we dismember. Like Pentheus we imprison the worshipers, not seeing that they are our own children. Is this not madness?

The head goes on singing.

◆

Apocynum cannabinum & Apocynum androsaemifolium

I treat these two plants together because they are so similar, and, in fact, are reported to hybridize (Moore 1979). *Apocynum cannabinum* is called "Indian hemp," a most suggestive name that actually refers to the plant's use as a fiber. *Apocynum androsaemifolium* is called "bitterroot," or "dogbane." These two plants are the major representatives of the Apocynaceae in temperate North America, the family richest in alkaloids of any plant family in the world. Both plants are cardiac stimulants. Moore (1979) states that *A. cannabinum* is significantly more dangerous than *A. androsaemifolium,* and that the plants are not to be used interchangeably. Duke (1985) concurs that the two plants must not be confused.

In spite of the widespread use of *Apocynum androsaemifolium* by American Indian tribes for a wide variety of ailments, Duke states frankly that he is afraid of this cardiotonic plant. As Duke's many years of research have proved him to be a man not easily frightened, I have put my own longstanding interest in both of these plants on hold, pending more chemical and biological studies.

◆

Greenness is viridian: verdant, verdure,
the creative force of nature,
the Creator in, not of, not apart from:
Viriditas.

The word is all verdant greening, all creativity.
– Hildegard of Bingen

Jesus is "Greenness Incarnate," born of Mary who is *viridissima virga,* the greenest of the green supple branches.

Latin *virga:* flexible branch,
related to *virgo,* virgin.

The greenness is all, the link between microcosm and macrocosm.

The soul is the freshness of the flesh, for the body grows and thrives
through it just as the earth becomes fruitful through moisture.
– Hildegard of Bingen

Green is the moist force: υγρα φυσις, *ugra phusis,* moist essence, the epithet of Dionysus.

Sin is drying up, the dry and cold that hardens the heart. Wetness and fire are the work of the spirit. The Elixir as Heavenly Dew.

Vala: moist envelope of the soul.

Come forth O Vala from the grass & from the silent Dew
Rise from the dews of death for the Eternal Man is Risen
– Blake, Four Zoas 126:31–32

The vital moisture: animal sperm, semen,
"slime," Latin *virus,*
the poisonous sap or juice of plants, *virulent.*
The poison in greenness, the poison of life,
penetrating and suffusing the body of the world.

Green Man as the Divine Imagination,
the Divine Word,
His Words are leaves.

◆

Hedera helix As stated earlier, ivy was the plant most commonly associated with Dionysus and later with Bacchus. An early Council of the Church forbade the use of ivy wreaths because of its pagan associations. What Dionysus was doing with the ivy is not certain. Ruck (Wasson et al. 1986) suggests that it was the wild nature of ivy that was represented, ivy being the wild vine while the grape was the domesticated vine. Grieve (1971) thinks that the ivy wreath came from the custom of binding ivy around the head to prevent drunkenness.

And, interestingly, ivy was commonly added to wine. (The ale admixture was ground ivy, a different plant, *Glechoma hederacea.*) The addition of ivy to wine, in all probability, was for its narcotic properties. In addition, according to Duke

(1985), ivy, like ground ivy, is also an antiseptic, and therefore may have functioned as a preservative. But one wonders about ivy: what else does, or did, it do?

An astounding list of herbal properties are ascribed to ivy, many of them contradictory, such as being both a vasoconstrictor and a vasodilator. Ivy leaves were drunk to alleviate drunkenness, and ivy has been used on several continents as a narcotic. It is called a stimulant and also a sedative. Ivy is so high in saponins that the leaves can be used for washing wool. Other herbal uses are for rheumatism and as an emetic. Lewis (1977) lists vomiting, diarrhea, and nervous depression as the symptoms of ivy poisoning.

◑

The Green Man holds snakes, or has snakes growing from his head with the leaves, green of the sacred groves. Sacred groves, sacred temples.

Many Indian temples begin as wayside shrines, gradually accumulating size and importance. The simplest wayside shrine consists of a tree, a stone, and a snake.

The serpent is the *pharmakon*. When the Hebrew tribes were being poisoned by snakebites, Nehushtan, the bronze serpent, befriended them. Moses raised the metal serpent up on a cross, and all those who gazed at it were saved.

Hezekiah later destroyed Nehushtan, and cut down the sacred groves of Asherah.

The fiery madness had returned.

St. Patrick rid Ireland of snakes by poisoning the earth with his staff. He protected himself with magic, black magic, curses. He used "The Deer's Cry" against "spells of women and smiths and druids; against every knowledge forbidden to the souls of men."

The Christian saints and missionaries cut down the sacred groves. Tree worship was particularly difficult to *uproot*. Living, rooted trees were suspect generally, being of little use to a sky god and probably even belonging to rivals. Perhaps because of the cross, Christianity was unable to incorporate or assimilate the Sacred Tree into its traditions, as it had so many other pagan beliefs.

The cursed cross.

St. Boniface cut down the sacred oak of Thor, and used the wood to build a cross and a chapel. So fanatical was the man that the only way the Frisians were able to halt his destruction was by killing him, in 755.

The power of the Word: the victory of Christianity over paganism is also the triumph of literacy and a cosmopolitan worldview; it is the triumph of the Apocalypse. The Apocalypse is both their power, the source of their fanaticism and also their great disease. It is their Great Poison.

The Apocalypse is a *new* kind of poison that attacks eternity and creates history.

Revolution, a New Age, the Final Conflict, the Millennium.

> *Crowding all that need for newness into one apocalyptic moment.*
>
> – *Norman O. Brown, "Love Hath Reason, Reason None"*

The poison rubs a callous on the heart. The heart is a beating thing, like a drum, creating and sustaining the eternal moment. The Apocalypse is static. It stands outside of time and rubs a blister like a bad seam. Justice and righteousness crowd out love, a cauldron of sulphur with no mercury. Those poisoned by the Fixed Time are driven more by fear of the old gods than by faith in the new One. A new level of superstition and intolerance appears, directed at the earth itself.

Time is saturn.
Fixed Time is the sulphur of saturn.

Christianity's final solution to the Tree of Knowledge was to cut it down. It is not clear that that has changed.

◆

Genista canariensis [*Cytisus canariensis*]

Based on field reports from Michael Harner, James Fadiman investigated the properties of Canary Island broom, *Genista canariensis,* a shrubby member of the bean family (Leguminosae, or Fabaceae), and published his findings in *Economic Botany* in 1965. *Genista canariensis,* like all species of broom, is not native to North America, but was introduced from the Canary Islands. Other species were introduced from the Mediterranean. According to Fadiman, a Yaqui shaman learned about the properties of broom after being instructed to smoke the blossoms of the plant by a *plant teacher* during a trance. The preparative technique is to age the blossoms for ten days in a sealed glass jar, then to dry them and smoke them.

Fadiman's paper was published thirty years ago, and surprisingly little has been added to our store of knowledge since that time. It is indeed with chagrin that this reporter is unable to supply you with a first-hand account of the effects of this promising plant. So many plants, so little time. I will try to remedy this omission in Book Two of *Pharmako/Poeia.*

A WELL-DEVELOPED PLANT PERSON

My major obstacle has been in obtaining the blossoms. Although Scotch broom (*Cytisus scoparius*) and French broom (*Genista monspessulana*) are both common and aggressive invaders of the California landscape, Canary Island broom is not, in fact being rather rare. Identification of the various species requires taxonomic skill; botanical keys cite the relative elongation of the racemes, the presence or absence of a few hairs on the back of the banner, and the length of the leaflets. In Canary Island broom the leaflets are five to ten millimeters long, while in French broom they are ten to fifteen millimeters. If your taxonomic experience is like mine, the length of the leaflets of the plants you collect will be precisely ten millimeters.

Five species of *Genista* occur in California, along with three species of *Cytisus*, as well as *Spartium junceum,* Spanish broom. The taxonomy is further complicated by the promiscuous tendencies of broom to interbreed, so much so that most of the California plants are hybrids.

Given this state of affairs I think it is not unreasonable, nor insulting to Mr. Fadiman, to double-check his assertion that the plant he collected in Palo Alto is indeed *Genista canariensis,* especially as *The Jepson Manual* lists the western transverse ranges, not the San Francisco Bay Area, as being the plant's habitat. It is quite possible that French broom is as effective as Canary Island broom and that French broom, rather than Canary Island broom, is the plant that Fadiman tested.

Fadiman also tested Scotch broom (*Cytisus scoparius*) and Spanish broom (*Spartium junceum*). For all three plants, the blossoms were aged in a sealed, sterile glass jar. Fadiman mentions that whereas the flowers of Scotch broom and Spanish broom faded, the Canary Island broom flowers retained their yellow color. The aged flowers were then dried and rolled into cigarettes and smoked. Subjects reported that *G. canariensis* was the most pleasant and effective. After inhaling one cigarette, subjects reported feeling relaxed and good about themselves, and friendly toward the others in the room, the effects lasting about two hours. With larger doses, several cigarettes, the subjects also reported intellectual clarity and flexibility, along with physical ease, psychological arousal, and alertness. In some cases heightened awareness of color and closed eye imagery were reported.

All parts of Canary Island broom contain cytisine, the poisonous alkaloid also found in the mescal bean, *Sophora secundiflora,* of which I will write more in Book Two. Richard Evans Schultes (Schultes and Hofmann 1980) says that hallucinogenic activity for cytisine has not been demonstrated. But the use of the mescal bean as an entheogen is well documented, dating back at least 8,000 years. It is also quite possible (and I think likely) that the reported effects of *Cytisus canariensis* are not due to cytisine, but to some other substance, such as a terpene.

All of the brooms deserve more study. Christian Rätsch (1992) states that Yaqui magicians also use the seed capsule to prepare a divinatory drink used for time travel (effects that are likely to be from cytisine and the other alkaloids). He also writes that the blossoms are mixed with marijuana for an aphrodisiacal smoke used in sexual magic circles.

In the field, *Spartium* can be distinguished from the other brooms by its round stems and simple (undivided) leaves, which are less than an inch long. Scotch broom is best recognized by its strongly five-angled stems. The leaves of Scotch broom are ternately compound (divided into three leaflets), and rather sparse–sometimes the plant looks as if it were leafless. Both French and Canary Island broom have ribbed stems, but not as deeply angular as in Scotch broom. Like Scotch broom, French and Canary Island broom have ternately compound leaves. As stated earlier, the leaflets of French broom are generally ten to fifteen millimeters, while those of Canary Island broom measure five to ten millimeters.

The most important diagnostic feature of the brooms may be the *banner.* All of the brooms have yellow flowers, with the distinctive pea-flower shape common to most legumes. The two inner petals of the flower are usually joined together and are called the *keel,* the two petals that enclose the keel are called the *wings.* The *banner* is the top petal, which is usually bent upright (reflexed). The banner of Scotch broom measures fifteen to eighteen millimeters. The banner of French broom is ten to fifteen millimeters and is *glabrous* (hairless). Canary Island broom has a banner ten to twelve millimeters long and is glabrous *except for a V-shaped hairy area from the base to the tip.*

Be careful that the flowers do not mold during the aging. Some people report headaches after smoking prepared broom flowers, and mold might be the culprit. Note that *Cytisus canariensis* is a synonym for *Genista canariensis.*

◑

Green as the outlaw, outside the law. It just grows by itself, with or without our approval. Green Man as the barbarian, the Wild Man beyond the wall.

> *Only barbarians are capable of rejuvenating a world laboring under the death throes of unnerved civilization.*
>
> – *Engels*

Robin Hood; Robin of the Green, King of the May. Jack the Fool, who met the Green Man of Knowledge. Wild strobe lights, dancing. A Green Man raving all night, taking his seat the next morning in Parliament.

The Maypole at Merrymount. The counterculture arrived in the New World shortly after the Pilgrims. Thomas Morton was the co-owner of a company that brought a group of indentured men to Massachusetts in 1625. They built their settlement a few miles from Plymouth. The purpose of the company was profit. When the reality of the prospects in the Massachusetts wilderness became apparent, Morton's partner shipped out for Virginia, where he planned to sell off the indentured men, leaving Morton in charge in his absence.

Morton, who was a poet, made a speech to his men telling them that they had nothing to lose but their chains, and why not rebel, declare themselves free men, and learn to live as the Indians did – that far from being the abode of the Devil, as the Pilgrims saw it, the New World wilderness was the Garden of Eden.

They set up an anarchistic community and named it Merrymount. Morton had pagan leanings and told the company stories of the old gods. They set up a

Maypole and invited the local Indians to a celebration. The men found the Indians friendly, ready to have a good time, and ready to trade. Morton's men showed the Indians how to fire muskets, and found that the Indians would make a good trade in furs in return for muskets and powder.

Stories of the parties and the mixing with Indians got back to Plymouth, and Miles Standish made a surprise raid with some soldiers and kidnapped Morton. Standish had provided the Indians with their first generic term for white Europeans (*cutthroat*) when he had invited two leading chiefs to a council inside his fort and then had them both murdered with swords. Standish wanted to lynch Morton on the spot, but some of Standish's men convinced him that Morton had important friends in England and that there might be repercussions. Instead he chained Morton to a tree on an island to await the next ship for England, assuming he would starve to death. The Indians fed him.

◐

Humulus lupulus

Hops. Hops is best known to us because the flowers are added to beer as a preservative and bitter flavoring agent. It was the extraordinary bactericidal properties of hops that first allowed beer to stay fresh long enough to be transported, making beer the prime impetus behind the formation and spread of the Hanseatic League (DeLyser and Kasper 1994, Kasper 1994).

But hops has other herbal powers: it is a powerful soporific. A bitter hops tea at bedtime is effective against insomnia and in alleviating stress. Hops pillows have been used to aid sleep for a thousand years. Hops is also used to stimulate the appetite and, according to Jeanne Rose (1983), to ease delirium tremens. James Duke (1985) says that while he personally would not hesitate to drink a decoction of hops, chamomile, and valerian as an herbal sleeping potion, he would never recommend it to anyone else. It is not clear from the text if his reticence is related to the bitter taste or to other properties of *Humulus lupulus*.

Young hops shoots may be eaten like asparagus, and were so by the Romans.

Nothing that I have read or experienced gives any merit to the stories of hops being grafted onto marijuana plants; supposedly resulting in a THC-containing hops plant that you could grow in your front garden. On the other hand, grafting marijuana onto hops rootstock might indeed result in a perennial marijuana.

◐

Romanesque Green Man: Hrabanus Maurus (784–856) identified the leaf with sexual sin. Carvings of the Great Goddess appear on churches, her legs spread, giving birth to vegetation. Sexual scenes also, leafy men and women with exaggerated genitalia.

The Christian devil. The Christian shepherd-god.

The Green Man grows hooves, an even-toed ungulate, big-horn sheep pecked into basalt.

Smell of the forest in summer, pine trees, Pan's semen, dripping down cracked furrows of bark, thick with terpenes.

> *Metamorphosis into a tree. A fall, into the state of nature. The spirit, the human essence, hides, buried in the natural object; "projected." Great Pan is dead. Ovid's Metamorphoses, the death of the gods, and the birth of poetry.*
>
> *Norman O. Brown, "Daphne" (Apocalypse and/or Metamorphosis)*

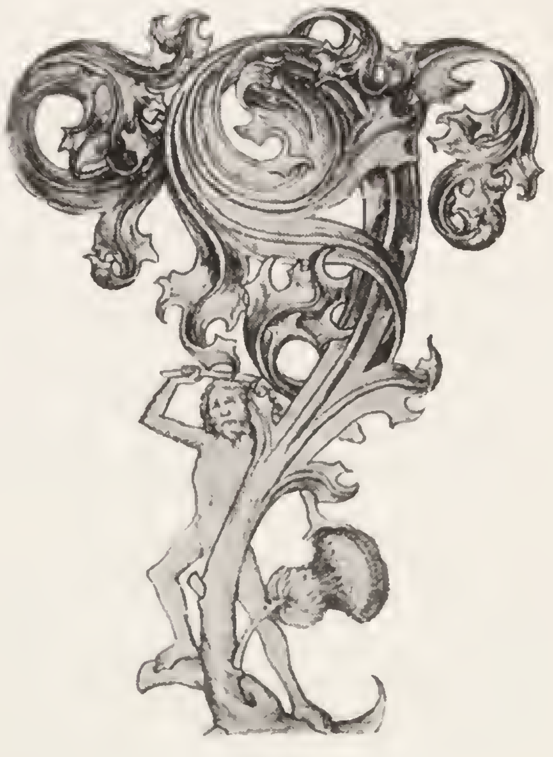
Great Pan is dead – the Tree felled and bucked, limbs piled to burn, *the limbs of Osiris.*

> *No god, that men can conceive of, could possibly be absolute or absolutely right. All the gods that men ever discover are still God: and they contradict one another and fly down one another's throats, marvellously. Yet they are all God: the incalculable Pan.*
>
> *– D. H. Lawrence, Reflections on the Death of a Porcupine (quoted in Merivale 1969)*

Pan. Everything. Panic, the fear of emptiness and infinity. The head is not sprouting, but devouring – the Green Man who consumes even enlightenment.

The Way of Poisons: *metanoia, kensho;* OWNING the Green Man. Welcoming the stranger: "The least of these, my brethren."

All we consume is the Buddha.



THE GREEN MAN AS DAKINI

NITROUS OXIDE

Common Name Laughing gas.

Related Substances Other nitrogen oxides, NO and NO_2; nitrogen itself, N_2; ammonia, NH_4; oxygen, O_2; carbon dioxide, CO_2.

Chemistry N_2O: two atoms of nitrogen, one atom of oxygen.

How Taken Inhaled. Professionals, such as anesthesiologists or dentists, carefully mix it with oxygen and use pharmaceutical-grade gas. Others get it how they can: whippets, said to be fairly clean, or racing tanks, said to be technical-grade and to contain impurities. If you are fortunate enough to have a pharmaceutical tank, make the extra effort to get a scuba regulator. Whippets usually go into balloons.

Effects The wah-wahs.

How Taken Never inhale gas directly from a tank or cannister: expanding gas is very cold (Charles's Law) and can freeze your throat. Most of the (rare) injuries and fatalities associated with nitrous oxide use are from things like tanks falling over, people standing up and falling over unconscious, dropped cigarettes – from stupid things like that. Or even more stupid, people putting bags over their heads or turning on a tank in an enclosed space, and then dying of anoxia.

Nitrous oxide supports combustion as well as oxygen does, in matters of open flame, but that does not go for your bodily respiration. YOU still need oxygen. Be sure you get it.

Effects The calculus of abstraction. Infinite series as the nature of consciousness. Relation. Ratio. Discrete versus continuous. The identity of quantization and possibility.

Pharmacology Anesthesia in general is not well understood. The anesthetic action of gases and solvents probably involves their solubility in the fatty membranes of synapses. As deep-sea divers learn, even nitrogen will dissolve in synaptic membranes if under enough pressure. Nitrous oxide is lipophilic and dissolves easily in fats, which is the reason it is used for whipping cream. One recent study claims that the anesthetic properties of nitrous oxide involve opioid receptors.

That such spectacular effects of metaconsciousness derive from so simple a molecule is intriguing. And the radical differences between N_2O and NO_2 underscore the inadequacy of simplistic rationalistic approaches to alchemical theory. Nitric oxide, NO_2, is a brown, choking, poisonous gas and a major component of smog. In between the two oxides is NO, nitrogen monoxide, recently discovered to be one of the most important and ubiquitous neurotransmitters in the body, involved in smooth muscle mediation generally, and in penile erection particularly.

The Plant

A product of decomposition, nitrogen cycling,
air to plant to earth to air:
transmigration of elementals,
anaerobic reduction: nitrogen
moving through green, finding
brief lodging in amino, nucleic acids.

Nitrogen is the temper.

Soil bacteria that feed on ammonium-rich ash and detritus from plants excrete nitrous oxide. Burning biomass, such as in brushfires and forest fires, also releases nitrous oxide into the atmosphere, but recent studies suggest that this mechanism is a minor factor in the measured global increase of N_2O in the atmosphere. Clear-cutting and slash-and-burn agriculture, as would be expected, also feed nitrogen-oxide emitting bacteria. But most researchers believe that it is the burning of fossil fuels that is the most significant factor in the build-up of atmospheric N_2O.

$N_2 \rightarrow NO_3$
Alliance between plants and bacteria.

$NO_3 \rightarrow$ amino acids
Plants.

amino acids → proteins
Plant seeds, fruits, and flowers, eaten by animals.

proteins → NH_4
Death.

$NH_4 \rightarrow NO_2, N_2O, NO_3$
Aerobic and anaerobic soil bacteria.

A few nitrates are created by lightning.

Toxicology

New evidence suggests that chronic exposure to low levels of nitrous oxide increases infertility in women. The mechanism is unknown. A single exposure to a large concentration of N_2O has not been linked to decreased fertility.

Heavy prolonged use of N_2O has been linked to central and peripheral nerve damage. Vitamin B12 is inactivated by nitrous oxide, which is needed by the enzyme methionine synthase in order to function. Dietary B12 supplements may or may not aid recovery from the neuropathy. Dietary methionine is more likely to be helpful. The nerve damage, or most of it, is reversible with abstinence from the gas. The first sign of the neuropathy is a tingling in the fingers or in the feet.

J. F. Nunn (1987) reports that exposures of less than half an hour appear to be safe, while exposures of over two hours are likely to interfere with the methionine synthase in the liver, a condition that will then last for several days. Nunn's study thus indicates that the toxicity of N_2O can build up over a period of up to three days, implying that judicious users should wait at least that long between heavy sessions. It is not clear how long an exposure is required to disrupt DNA synthesis to the point of nerve degeneration, but, considering the decades of nitrous oxide use and abuse, and the rarity of the condition, it is likely that many days of heavy exposure are the danger here, not an evening of inhaling balloons. People have undergone dental work requiring two hours of nitrous oxide anesthesia twice a week for months at a time.

Nitrous oxide should not be used by pregnant women, nor fertile women seeking that condition. Ditto all the other poisons, but in particular the vitamin B12 deficiency associated with prolonged use of $N2O$ increases the risk of bearing a child with an open spinal cord or an undeveloped brain.

Effects

pulsations,
that's the first thing:
pulsations of light and sound.

The Ally Basic things, like the difference between one and zero, become immensely significant.

The Plant

Nitrogen is the temper,
a buffer to oxygen,
lest we burn too whitely.

We all breathe the same air. We live on a nitrogen planet. Nitrogen is our primary substrate, the ocean we feel within and through. Little bits of it oxidize in bacteria, a chicken-and-egg problem: combine with carbon, carbohydrates, nitrogenous bases for DNA, or with amino acids for proteins.

Cyanide is just CN, carbon and nitrogen – no oxygen. Lacking the elemental poison itself, cyanide can't abide those who possess it.

Alkaloids are plant ambassadors to the animal world, passing the proteinacious frontiers with a nitrogen passport.

Nitrogen is wind and movement,
plants with nitrogen grow legs, or wings.

History Nitrous oxide was discovered in 1772 by Joseph Priestley, the discoverer of oxygen, nitrogen, and ammonia, and perhaps the greatest chemist to appear since Paracelsus. Alchemy was dead by the eighteenth century, but Priestley is clearly aligned with the best of the old tradition: he was a Unitarian minister and a philosopher as well as an experimental scientist. He was a student of languages: he studied Chaldee and Syriac, and could read Arabic as well as French, German, and Italian. Priestley is mostly remembered because of his discoveries of oxygen and nitrogen and for laboratory techniques for working with gases, but he also published ten volumes on theology, the history (and corruption) of religion, and metaphysics, as well as several books on color, light, and electricity. He met Lavoisier on a trip to France, and it was from Priestley that Lavoisier learned how to prepare oxygen.

Priestley's father lived in Yorkshire, was of the Nonconformist Party, and raised his son in that tradition. Priestley's whole education was in "alternative" schools. He never attended a university. In spite of a severe stutter, as a young man Priestley supported himself by teaching school. He corresponded with Benjamin Franklin and taught his students and himself electricity and chemistry. He also wrote political tracts, supporting the American Revolutionary cause and later that of the French.

The Ally

more reckless close to the edge
but it is more than self-destructive impulses,
it is the very
the very very
energy
that creates what it is
you are starting from to begin with, ahhh,
right!

At the age of thirty-four Priestley moved with his family to Leeds. His house was next door to a brewery, and it was in experimenting with those *poisons* that he began his career as a chemist. He collected the gas bubbles coming up from the brewing vats and discovered that they would extinguish a candle flame. He learned to prepare this "fixed gas" himself and invented soda water, for which he was given a gold medal by the Royal Society. He invented the pneumatic trough to collect pure gases, and was the first to collect hydrogen chloride gas, bubbling it through mercury instead of water.

It was at Leeds that he conducted the experiments that led to the discovery and characterization of nitrous oxide, oxygen, nitrogen, ammonia, and hydrogen chloride gas. There is no record that Priestley ever inhaled nitrous oxide, but he did inhale oxygen. He proved that oxygen was the part of air that supported life when he was unable to resuscitate a mouse that had collapsed fifteen minutes after he had placed it in a bell jar, while another mouse in a jar of oxygen remained conscious over twice as long, and revived after being rescued from the jar (Priestley warmed it in front of his fireplace). Priestly deduced that oxygen was richer than common air and correctly intuited that it would be beneficial for cases of morbidity where a person was short of breath. He also sensed that pure oxygen would be too rich to breathe all the time, that one would "live out too fast."

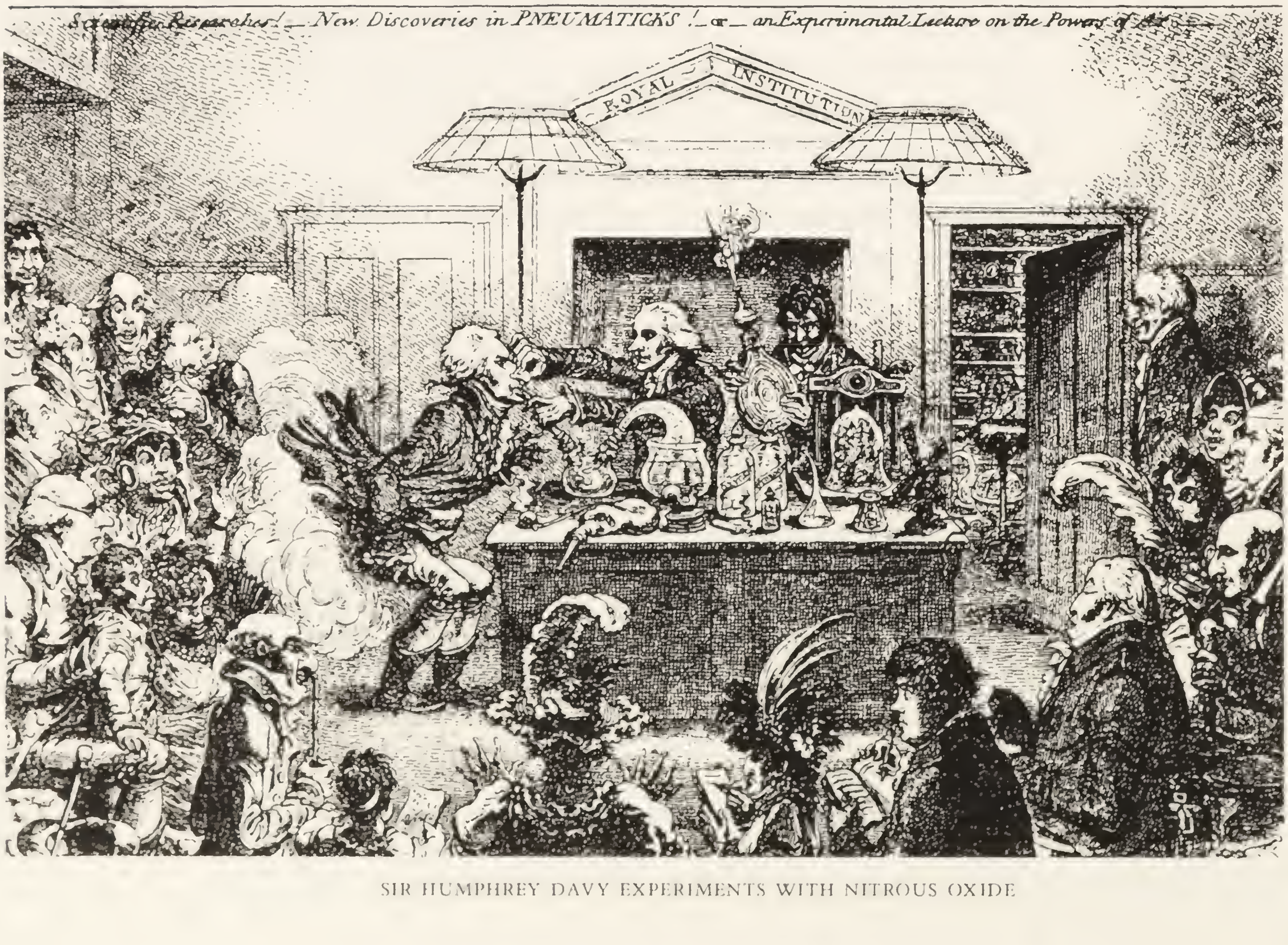
Priestley included plants in his gas experiments, discovered that plants breathe, and that their respiration was opposite and complementary to animal respiration – that, indeed, it was plants that saved animals from dying of their own exhaled poisons. He deduced the role of plants in absorbing carbon dioxide from the air and assimilating the carbon into organic living forms, thus founding biochemistry.

While Priestly was attending a banquet of the "Constitutional Society" on July 14, 1791, to commemorate the anniversary of the storming of the Bastille, town conservatives, encouraged by the government and the mainstream church, burned down his house and his laboratory, destroying his books, manuscripts, and everything he owned. The French offered him asylum, but Priestley finally chose to emigrate to America. He died in Pennsylvania, a friend of Washington and Jefferson.

> *It's the instant of going*
> *into or coming out of*
> *existence that is*
> *important – to catch on*
> *to the secret of the magic*
> *box*
>
> – *Allen Ginsberg, "Laughing Gas"*

History

The gas baton was passed to Thomas Beddoes, a doctor, chemist, poet, and, like Priestley, a pamphleteer of antiwar politics. It was because of his political views


Scientific Researches! — New Discoveries in PNEUMATICKS! — or — an Experimental Lecture on the Powers of Air
ROYAL INSTITUTION

SIR HUMPHREY DAVY EXPERIMENTS WITH NITROUS OXIDE that he was forced to resign his chair in chemistry at Oxford. Beddoes moved to Bristol and founded the Pneumatic Institution. Priestley's friends Erasmus Darwin and James Watt were visitors and supporters, as was Priestley's son. Beddoes took on a twenty-year-old self-educated student of chemistry named Humphrey Davy as his assistant and associate.

Davy had already disproved a theory that nitrous oxide was the disease-spreading contagious gas created by decomposing flesh. He perfected the preparation of nitrous oxide and performed many experiments with it, including extensive inhalation by himself and many others. He reported his findings in a six-hundred-page book.

> *"Ha! Ha! Ha!" said Inflammable Gass. "He was the Glory of France. I have got a bottle of air that would spread a Plague."*
>
> *– William Blake, "An Island in the Moon"*

Davy was something of a poetaster, and both Samuel Taylor Coleridge and Robert Southey visited the institute and became his friends. Coleridge liked Davy's poetry, and said that if he were not the first of chemists, he would be the first of poets. Southey was less generous, but did say that Davy had all the elements of a poet, just lacking the art. Southey and Davy experimented with laughing gas together numerous times, exploring great cosmic raptures. Some of the imagery is in Southey's long poem *The Curse of Kehama:*

> *. . . trees of light growing in a soil of ether.*

Coleridge, though his association with opium is better known, tried laughing gas and ether also. He attended Davy's lectures to get new metaphors, and to witness the colors of burning metals and gases.

Davy's experiments with nitrous oxide established his reputation, and he was given a position as a lecturer in chemistry in London. Davy became a great chemist. He used electricity to prove that lye and potash were compounds, not elements, and he discovered and isolated the real elements that they contain: sodium and potassium. He discovered boron and barium and calcium. He was the first chemist to isolate strontium and magnesium. He proved that a diamond was pure carbon by burning one with electricity. He also invented the safety lamp used thereafter by miners, and refused to take a patent on his invention.

Dr. Beddoes and the Pneumatic Institute didn't fare as well. The experiments with laughing gas had attracted many visitors, including women. The combination of women and radical politics with wild explorations of consciousness aroused a conservative backlash, and use of the gas by the general public was curtailed.

> *Nothing exists but thoughts. The universe is composed of impressions, ideas, pleasures and pains.*
>
> *– Humphrey Davy, under N_2O (1799)*

The Ally

It beats,
it walks, beats.
It gets closer to the edge,
cuts through what it has been told,
and says no, forget the safety factor.
Forget the safety factor,
I want the stuff that's going to take me over the edge.

History

Perhaps the best-known experimenter with nitrous oxide was William James, and on the evidence of the importance of those experiments for his spiritual development and career, we claim James as a doctor of the *poison path.*

> *Our normal waking consciousness, rational consciousness as we call it, is but one special type of consciousness, whilst all about it, parted from it by the flimsiest of screens, there lie potential forms of consciousness entirely different. . . . No account of the universe in its totality can be final which leaves these other forms of consciousness quite disregarded.*
>
> *– William James, The Varieties of Religious Experience*

In 1882, James was struggling with Hegel, and had just written a paper admitting defeat, or the impossibility of the union of opposites. A small book by another philosopher, Benjamin Blood, called *The Anesthetic Revelation,* prompted him to try nitrous oxide. The results of his experiments forced James to add an addendum to his paper: with the stimulus of nitrous oxide Hegel evidently became something of a paper tiger. In his own words, good and evil were reconciled "in a laugh." James wrote that under the influence of the gas, identifications of opposites stream through the mind torrentially:

> *I have sheet after sheet of phrases dictated or written during the intoxication, which to the sober reader seem meaningless drivel, but which at the moment of transcribing were fused in the fire of infinite rationality. God and devil, good and evil, life and death, I and thou, sober and drunk, matter and form, black and white, quantity and quality . . .*
>
> *– James (1882)*

Benjamin Blood, whose writings impressed James favorably, explored the nature of existence through nitrous oxide for over fifty years. He published books and pamphlets until the end of his life, when he was in his eighties, and came as close as anyone to founding a religious-philosophical cult based on the insights catalyzed by the gas.

> *The Anesthetic Revelation is the Initiation of Man into the Immemorial Mystery of the Open Secret of Being, revealed as the Inevitable Vortex of Continuity. Inevitable is the word. Its motive is inherent – it is what has to be. It is not for any love or hate, nor for joy nor sorrow, nor good nor ill. End, beginning, or purpose, it knows not of.*
>
> *– Blood, The Anesthetic Revelation*

Blood claimed that his insight into the nature of what is gave him moral sustenance and equanimity for the rest of his life. He believed that the "anesthetic revelation" provided experiential confirmation of Jesus' saying "My Father and I are one." Blood was quite certain that with the aid of the gas one would be "beyond instruction in spiritual things" – a mystic:

> *Now for the first time, the ancient problem is referred to empirical resolution, when the expert and the novice may meet equally on the same ground.*

Benjamin Blood foresaw an anesthetic revelation revolution, in which thousands of people ("hundreds every secular day") would receive a consciousness-changing sacrament and would "date from its experience their initiation into the secret of Life."

Astute pupils of the poison way should find much to consider in the good doctor's vision: something in it should have a ring of familiarity. Did the anesthetic revelation fail? If it did, why? Is it that not everyone achieves the apotheosis attained by Benjamin Blood? Or is it perhaps that there is more to a path than the revelation that begins it? Or perhaps the fruits of the anesthetic revelation are still being harvested, and the alchemical philosopher was more successful than he dreamed.

> *I strongly urge others to repeat the experiment, which with pure gas is short and harmless enough.*
>
> *– William James*

The Ally

trying to think,
trying to maintain
that, politely, there,
that that which
keeps questioning
is really smarter than that
which is saying
that it's not

Class METAPHYSICA.

Marked by attention to the ultimate dialectic of being. According to philosopher Xenos Clark (in Shedlin 1992):

> *Mr. Blood and I agree that the revelation is, if anything, non-emotional. It is utterly flat. . . . The real secret would be the formula by which the "now" keeps exfoliating out of itself, yet never escapes.*

We must, however, understand the term *nonemotional* as not excluding hilarity, which by all accounts seems to be the most appropriate and characteristic stance to metaphysical ontology.

History Laughing gas appeared in the United States in the 1840s. Doctors and other sideshow artists (the differences were not always so clear) toured the country giving demonstrations of the gas complete with audience participation. The men inhaling the gas at sideshows would dance around, hoot, howl, jump, or fight – whatever was expected of someone wildly "inebriated."

A National Institute on Drug Abuse monograph refers to the people who toured with these shows as "charlatans," but it was one of them, Dr. Gardner Colton, who finally got the medical establishment to pay attention to Davy's work and to use N_2O as an anesthetic. A young dentist named Horace Wells, who had attended one of Colton's lectures, was the first to extract a tooth from a patient under nitrous oxide. Gardner Colton administered the gas. Wells continued to use nitrous oxide on his own patients until he committed suicide in 1848, but the medical establishment mostly ignored or disbelieved his claims. The first dental clinic devoted expressly to dental extractions under laughing gas wasn't opened until twenty years later, by Gardner Colton.

The Ally

> *There are no differences but differences of degree between different degrees of difference and no difference.*
>
> – *William James (1882), reflecting on Hègel,*
> *after inhaling nitrous oxide*

Effects The revelatory properties of the gas are largely dulled by alcohol. This is surprising, considering the synergism of ether with nitrous oxide and that alcohol is likewise a hydrocarbon solvent. Evidently the semipolar nature of the ethanol molecule works at some neuropharmacological cross-purpose to more strictly nonpolar solvents.

Psychonauts (Ernst Jünger's term) report that nitrous oxide's revelatory effects are multiplied by *Cannabis* and vastly multiplied by plants or substances of class *phantastica,* such as psilocybe mushrooms or LSD. Not surprising.

Poesis Nitrous oxide can be prepared by heating ammonium nitrate, but it is not a good idea to do so unless you are a handy chemist. For one, NH_4NO_3 is explosive. For another, the reaction can yield other nitric oxides, which you have to wash out with sodium bicarbonate and activated charcoal, as you definitely do not want them in your lungs.

The Ally Nitrous oxide has been criticized on the grounds that the perceived profundity of its insights are only seeming. One example that is often trotted out is a ditty by William James, containing, he thought, the essential key to the secret of human society:

Higamous hogamus,
    woman's monogamous;
Hogamus, higamus,
    man is polygamous.

But actually, if you think about it enough, it's kind of hard to top.

Matters of State and Liberty

Nitrous oxide is a restricted substance. One effect of the restriction is that the poor, the young, and the less educated inhale toluene, butane, or gasoline instead, all of which are significantly more dangerous than nitrous oxide. Restrictive measures in England were sparked by suspicion that sexual improprieties were taking place at the Pneumatic Institute, and by the generally radical politics of those frequenting the institute. In the United States, nonmedical use of N_2O was prohibited long before there were any known health risks associated with the gas, the inebriation it caused being sufficient proof of its sinfulness.

Free laughter. Giggling. Revelations.
Maybe
a smart-alecky grin.

Getting high is against the law.

The Ally

it's the whatever-it-is
that what's doing it. that what just keeps
going forward, the creative aspect –
that creates what's going on
out of what wouldn't be.
I'm trying to think that there is something about it
is more than Thanatos –
something about exploring edges, the edge
of death herself, itself, herself, the edge:
something more libidinous and sexual about it,
going out to the edge and walking around it
more like cunnilingus –
edge and oblivion, the spaces between
vision, blackness, consciousness, waking and dream,
between breaths, a dancing forth,
one is a ripple, one is a runnel.

◆

For in this Period the Poets Work is Done: and all the Great Events of
Time start forth & are concievd in such a Period Within a Moment:
a Pulsation of the Artery.

– Blake

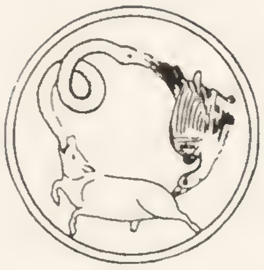
THE POISON PATH II

With the very poison, a little of which would kill any other being, a man who understands poison would dispel another poison.

– Hevajra Tantra

The Sanskrit for "poison" is *viṣam*. In Buddhism, three poisons form the hub of the Wheel of Life: *kāmā-rāga,* "desire," or "greed," depicted as a red cock;

a grasping quality: reaching out, to attain: meristematic
shoots after light, fungal hyphae seeking nourishment;
or hanging on, grasping backwards, clinging.



INNER CIRCLE OF THE BUDDHIST WHEEL OF LIFE

dveṣa, "hatred" or "aversion," a green snake; and *moha,* "ignorance," "folly," "delusion," represented as a black hog. They chase each other and bite each other's tails. Each poison is dependent on the others, and the whole cycle of birth and death is dependent upon them.

the snake's tongue flicking, smell
is tasting the air, repellents
as important as attractants:
amines of corruption, pheromones of disease,
bitterness in leaves

In rain-forest canopies the trees avoid each other: branches of each tree filling in just up to the others, like pieces of a jigsaw puzzle, but a little space between, just enough to foil crawling insects.

Some say the black hog is the mother of the other two;
others disagree, saying that greed and hatred
are equally fundamental.
Some say that all sentient beings can obtain buddhahood;
others are less charitable,
as much as charity has anything to do with
the veracity of spiritual laws.

◐

What shocks the virtuous philosopher delights the chameleon Poet.

– John Keats, letter to Woodhouse, 1818 (in Durr 1970)

The Poison Path is the narrow way, the twisting path, or no path at all. *You* could make it, O Nobly Born, you just might survive, yes, but who could follow you? Better to send them down the big road, well trodden and paved; this Poison Path is no shortcut. The Poison Path is best suited to tricksters and magicians who, if the stories are to be believed, come back to life after getting killed.

◆

> *A special transmission outside the scriptures.*

Poisonous dharma, poisonous datura, why be surprised that they grow together? A poison-filled cobra, what's he hiding? Medicines and powers, oak tree in the yard, a turtle-nosed snake.

> *Even today, right here, people are losing their lives, bitten by this snake.*
>
> *– Hekigan Roku, The Blue Cliff Record*

The poison becomes pervasive, and poisons the path itself.

◆

> *Socrates compares the written texts Phaedrus has brought along to a* PHARMAKON: *a "drug" or "medicine," – a philter which acts as both remedy and poison. . . . This charm, this spellbinding virtue, this power of fascination can be – alternately or simultaneously – beneficent or maleficent. . . . Operating through seduction, the* PHARMAKON *makes one stray from one's general, natural, habitual paths and laws.*
>
> *– Jacques Derrida, Plato's Pharmacy*

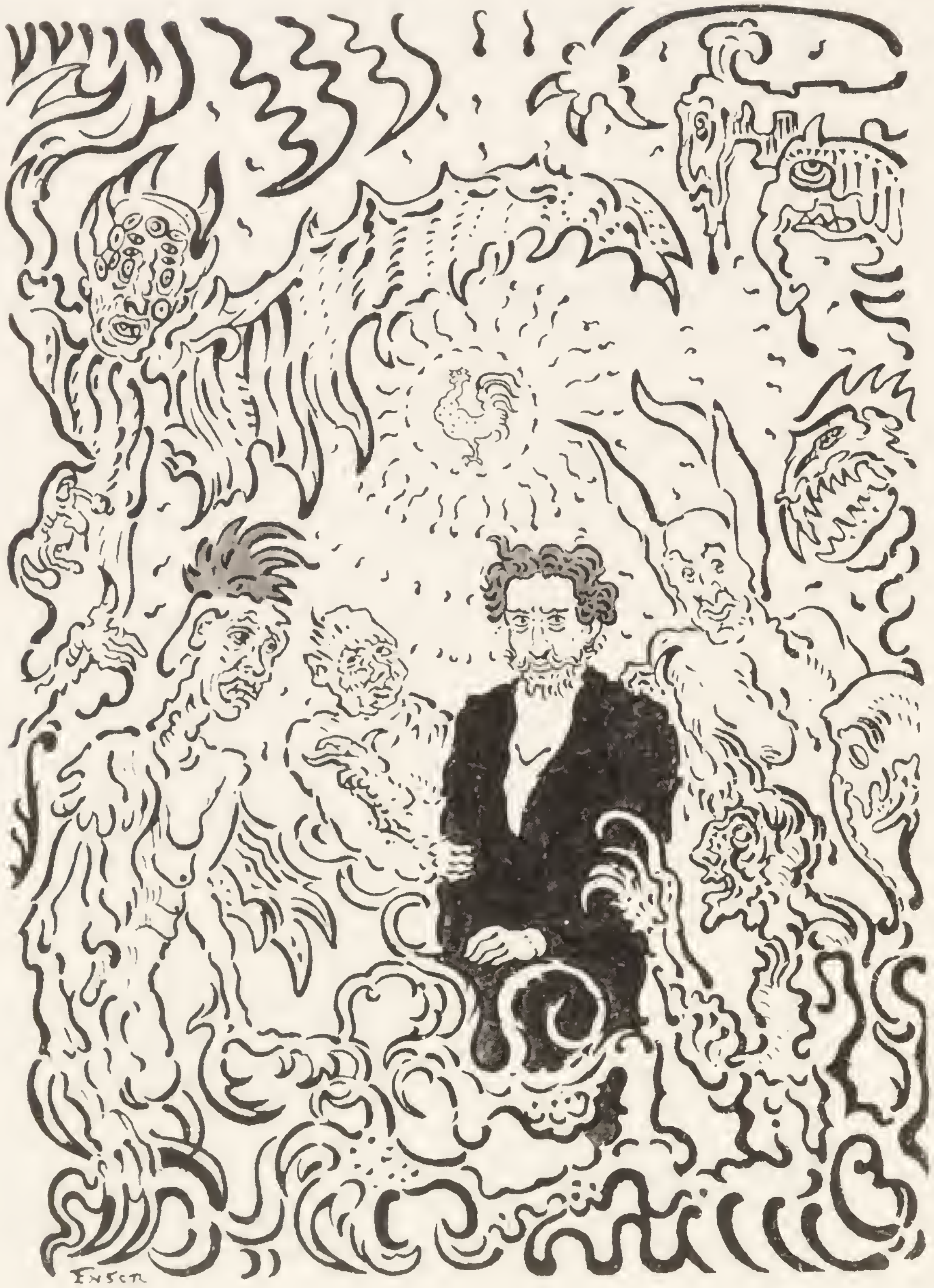
The primary poison is the Word – the *Pharmakos* – the one who stands-in-for. All other poisons function through this one, the signifying poison. Signifying monkey. Jesus should have been stoned, not crucified.

Pharmakos also meant "poisoner," and "sorcerer," and "magician." Plato banned the *pharmakeus,* the shaman, from his Republic in 480 BC. The Chinese kicked the shaman out of the government in the first century, along with her whole family.

Standing-in-for, the Logos. Morphine wearing the mask of endorphin, tetrahydrocannabinol dressed up like anandamide. Molecules standing in for stimuli: sensation symbolized on the cortex, rhodopsin a metaphor of light. Intellect is mediated and mediator, a mapping of pattern to patterns of ions, ratio, concentration of amines, layers of neurotransmitters themselves in flux, charged and shaped by emotion and memory. Mind acts it out, moves mountains, changes its own environment, altering the very reactions that led to the alteration.

> *and that's a good trick*

Patterns, likeness of pattern, and some analogous likeness of likeness: the swelling of sound in adagio and its neuronal reflection. The great bead game, poetry is poison – echoes of phonemes, ghosts standing in for ghosts.



JAMES ENSOR, "SELF-PORTRAIT WITH DEMONS," 1898

Poison as defilement: *kleśa,* the ten defilements, the seven deadly sins, the speck of dust that spoils the immaculate mirror, *Ālaya,* the "Store-Consciousness." The fly in the ointment is Beelzebub.

In the *Lankāvatāra Sutra* the *kleśa* is an uninvited guest, the one who doesn't fit in or belong, Dionysus, perhaps, or a furry critter with pointy ears, Coyote, or maybe two gods, wandering together among mortals, disguised.

> *If the Tathāgata-garbha or Ālaya-vigñana were not a mysterious mixture of purity and defilement, good and evil, this abrupt transformation (parāvṛitti) of an entire personality would be an impossibility. That is to say, if the Garbha or the Ālaya while absolutely neutral and colourless in itself did not yet*

> *harbour in itself a certain irrationality, no sentient beings would ever be a Buddha, no enlightenment would be experienced by any human beings.*
>
> – *D. T. Suzuki, The Lankāvatāra Sūtra*

The *Ālaya* is the Ally.

◆

The defilements are graffiti on the white wall of the Great Warehouse. Or maybe the storehouse walls are transparent, and the apparent graffiti our discrimination, itself the coloring – pigments, makeup – Empedocles' cunning artist mixing and applying his polychromatic *pharmaka* to votive offerings, creating men and women and trees. The Creator made the World from poisons.

> *Krankheit ist wohl der letzte Grund*
> *Des ganzen Schöpferdrangs gewesen;*
> *Erschaffend konnte ich genesen,*
> *Erschaffend wurde ich gesund.*
>
> *Disease at bottom brought about*
> *Creative urgence – for, creating*
> *I soon could feel the pain abating,*
> *Creating, I could work it out.*
>
> – *Heinrich Heine (in Freud, "On Narcissism")*

◆

There is no point to calling that defined as impure as being pure, or is there? "All the intrinsically pure defilements." All co-created, co-dependent impurities of thought and brain, flying at us like angels, or emerging from their own arising: a leaf, a horn, a dream, a voice that passed and dropped a word.

We are not trying to say that they are nice, these poisons, but "nice" is a relative, not a god.

> *Poison eyes, poison ears, poison songs:*
> *dreams within a dream.*

We hope we have not poisoned the world in vain.

◆

> *The intent of our teaching is like a poison-smeared drum. Once it is beaten, those who hear it, near and far, all perish. That those who hear it perish is surely true. But what about the deaf?*
>
> – *Zen Master Shiqi Xinyue, "Stone River" (in Cleary 1990)*

GLOSSARY

ACETYLATE: To attach one or more acetyl groups (CH_3CO) to an organic molecule with a reagent such as acetic anhydride or acetyl chloride.

ALBEDO: In alchemy, the "whitening" stage that follows the nigredo (q.v.) or "blackening" stage, and precedes the citrinitas (yellowing) and rubedo (reddening) stages.

ALEMBIC: An alchemical retort used for distillation.

ALKALOID: A nitrogenous compound commonly found in plants as a secondary metabolite. Many alkaloids are poisons thought to serve as protection against herbivores. Alkaloids are a rich source of pharmaceuticals. Morphine, cocaine, caffeine, quinine, and strychnine are all alkaloids.

AMYGDALIN: Also called laetrile, a cyanogenic glycoside in the seeds of of peaches, apricots, and especially bitter almonds. According to the *Merck Index*, it is not effective as a cancer treatment.

ANALGESIC: A medication that reduces or eliminates pain, such as morphine or aspirin.

ANANDAMIDE: A neurotransmitter that binds to the same receptors in the brain as does tetrahydrocannabinol, the active constituent of marijuana.

ANGIOSPERM: A flowering plant, plants with covered seeds, the largest class within the phylum of vascular plants, as opposed to gymnosperms, plants such as conifers that have naked seeds.

ANHYDROUS: Without water, dry. And we mean it.

ANODYNE: An older name for an analgesic, an agent that reduces or eliminates pain.

ANOXIA: Without oxygen, especially in the pathological sense; i.e. suffocation.

ANTHELMINTIC: A poison that will dispel worms.

ANTHROPOPHILIC: The community of plants, both wild and domestic, closely associated with human beings.

ANTHROPOPHYTIC: The plant communities adapted to living on land scarred, altered, improved, or ruined by human beings; often called "weeds."

ANTIATHEROGENIC: Reducing or eliminating the buildup of fats inside the arteries.

ANTITUSSIVE: Reducing or alleviating coughing.

ARRHYTHMIA: Irregularity in the force or rhythm of the heartbeat.

ASCOMYCETE: A sac fungus; a member of the class of fungi producing spores inside of an ascus, or sac, including yeast, truffels, and morels, but not gilled mushrooms.

ATHANOR: The alchemical furnace, usually a large affair, used for digestion and other cooking. In a more general and metaphorical sense, the place where you sit and cook until the work gets done.

AUTONOMIC SYSTEM: The motor nerves and ganglia not under voluntary control, such as the heart, glands, and smooth muscles. The autonomic nervous system is divided into the sympathetic and the parasympathetic systems.

BICYCLIC: A molecule containing two fused rings. Also, characteristic of the interest of velodrome habitués.

BIPHASIC: Characterized by two phases of action.

BUTANE: C_4H_{10}, an aliphatic hydrocarbon used in cigarette lighters and as a liquified petroleum cooking gas. Propane is C_3H_8.

CAPNOMANCY: Divination by smoke.

CATHARTIC: Purgative, or laxative: purifying.

CHLOROPLAST: A membrane-bound, chlorophyll-containing organelle found in algae and green plants; the site of photosynthesis.

CHOLINERGIC: Receptor sites and neurons activated by acetylcholine.

CLONODINE: An adrenergic agonist used in shaving soap and experimentally to ease alcohol and nicotine withdrawal.

COGNODYSLEPTIC: Causing an alteration in mental functioning distinct from stimulants and depressants.

CULTIGEN: A plant with no known wild or uncultivated counterpart.

CYANOGENIC: Capable of producing hydrogen cyanide, usually by hydrolysis.

CYTASE: An enzyme that dissolves cellulose.

DAKINI: The symbol of the inspiring power of consciousness in Vajrayana Buddhism, usually depicted as a naked and wrathful dancing female figure.

DIASTASE: Enzymes that convert starch into maltose sugar.

DICOTYLEDONOUS: Of the subclass Dicotyledonae, one of the two divisions of the angiosperms, the other being the Monocotyledonae. Dicotyledonous plants have two cotyledons (initial leaves) and the vascular bundles are in rings. Monocots, such as lilies and grasses, have a single initial leaf and scattered vascular bundles.

DIOECIOUSNESS: The state of being dioecious; having the male and female flowers on separate plants.

DIPLOID: Having two sets of each autosome (any non-sex chromosome), abbreviated ($2n$). Most higher life forms that reproduce sexually are diploid. Human beings are diploid, having a full set of chromosomes from each parent. Diploid hybrids, crosses between two different species, are generally sterile. For a hybrid to be fully fertile, it must be polyploid, perhaps tetraploid ($4n$), having two sets of chromosomes from each parent.

DISTILLING: As in distillation, boiling off a volatile substance, such as alcohol, from a mixture or solution of several compounds, such as alcohol and water, and then collecting the volatile part in a separate receiver by condensation.

DITERPENE: Terpenes that have four isoprene (C_5H_8) units. Terpenes are unsaturated hydrocarbons common in the essential oils of plants.

DIURETIC: Increasing the flow of urine.

DROSS: The black residue left after smoking opium, containing morphine and a mixture of partially oxidized morphine derivatives. I've never seen a good chemical analysis of opium dross. Questions of the pleasure and safety of smoking dross are matters of debate.

ECTOMORPH: In the system of W. H. Sheldon, a body type characterized by a lean and slender build.

EIDETIC: Characterized by vivid visual images.

EMETIC: Causing vomiting.

ENDOGENOUS: Originating within an organ or part.

ENDOMORPH: A body type characterized by soft body development originating in the endoderm. Rubenesque.

ENTHEOGEN: Generating god within. A term proposed by Carl Ruck, Jeremy Bigwood, Danny Staples, Jonathan Ott, and R. Gordon Wasson, as a replacement for such terms as *psychedelic, hallucinogen, psychotomimetic,* and a host of other words used to denote the plants and substances of the *phantastica.*

EPILEPTISANT: Causing epilepsy or epileptic reactions.

EPINEPHRINE: Adrenaline, a hormone produced by the adrenal glands.

ETHANOLPHILIC: Attracted to alcohol, alcohol-loving.

EUPHORIANT: A substance producing euphoria, feelings of blissful pleasure.

EXOTERIC: Relating to the external, suitable for non-initiates.

FEBRIFUGE: Antipyretic, an agent that reduces fever.

FLAVONOIDS: Naturally occurring phenolic compounds, often colored, such as coumarins and anthocyanins. Many flavonoids are biologically active. Research into the pharmaceutical usefulness of flavonoids is continuing.

GENOTYPE: The genetic constitution of a cell or organism, as contrasted with its phenotype, the outward, observable properties.

GLYCOSIDE: Large organic molecules common in plants that can be broken up to produce sugars, usually through hydrolysis.

HALOTHANE: A nonexplosive synthetic anesthetic.

HARMINE: A β-carboline found in the ayahuasca vine (*Banisteriopsis caapi*) and in Syrian rue (*Peganum harmala*) along with hamaline. Both harmine and harmaline are monoamine oxidase inhibitors (MAO-Is).

HERMETICISM: A philosophical school based on the writings of Hermes Trismegistus, and associated with magical and alchemical traditions.

HEXANE: C_6H_{14}, an aliphatic hydrocarbon and a major component of gasoline.

HOMEOSTASIS: Physiological equilibrium, and the tendency to return to same.

HOOPA: An indigenous people living in northwestern California.

HORDEAE: The barley tribe of the grass family.

HYDROCARBON: A molecule composed of hydrogen and carbon, such as methane, ethylene, acetylene, and paraffin.

HYDROLYSIS: A chemical reaction of a compound with water, the H and -OH parts of the water molecule attaching themselves to the dissociated parts of the reacting compound.

HYDROXYL: An -OH functional group in organic molecules, designated by the prefix "hydroxy."

HYDROPHYTE: A plant adapted to water or wet environments.

HYOSCYAMINE: A poisonous tropane alkaloid related to atropine and scopolamine common in many plants of the nightshade family.

INFLORESCENCE: The flowering part of a plant.

ISOMER: A compound having the same molecular formula as another compound, but differing in structure.

ISOQUINOLINE: Alkaloids such as morphine and papaverine that contain a C_9N double ring.

KAVALACTONE: Any of a number of compounds related to kavain, with various substitutions, found in the many varieties of the kava plant.

KEFIR: A beverage of fermented cow's milk.

LACTIFER: a glandular process or group of cells in a plant that produce latex.

LAETRILE: Amygdalin (q.v.)

LIGAND: A general term for a molecule that binds to a receptor.

LIPOPHILIC: Nonpolar molecules having an affinity for fats and lipids, and generally insoluable in polar solvents like water.

LYSE: To dissolve or loosen or break open; in cells often catalyzed by an enzyme.

LYTIC: Producing lysis, the breakdown or disintegration of a molecule or membrane.

MAZATEC: An indigenous people living in central Mexico, Oaxaca.

MERISTEMATIC: Relating to the undifferentiated cells undergoing division in the growing tip of a plant.

MESOMORPH: A body type with stocky, powerful musculature, cf. ectomorph and endomorph.

METABOLITE: A product of metabolism, thus the breakdown products of drugs in the body.

METHIONINE: An essential amino acid not synthesized by the human body, important in biological methylations.

MOXIBUSTION: A Chinese therapeutic technique in which smouldering herbs are applied to specific points and meridians on the body, related to acupuncture.

NEPENTHE: The drink (νηπεζφές) that Helen served to Telemachus's companions when he was visiting Menelaus, said to bring the forgetfulness of all past ills.

NERVINE: A substance acting as a general tonic for the nerves.

NEUROHORMONE: A hormone secreted by or acting upon the nervous system.

NEUROPATHY: An abnormality of the nerves, especially degeneration.

NEUROTOXIN: A poison that acts upon the nervous system.

NEUROTRANSMITTER: A chemical secreted by an electrically excited neuron into a synapse, that then binds to specific receptor sites on the membrane of the postsynaptic cell. It's actually a little more complicated than that sounds. A single mammalian motor neuron can have more than 10,000 synapses on its surface, and there may be 10,000 different classes of neurons in the brain of a vertebrate. *The ten thousand things.* And synapse can be a verb.

NIGREDO: The "blackening," the first stage of the alchemical process, concerned with eliminating all the non-essential in order to arrive at the *prima materia*, the original matter.

NORNICOTINE: An alkaloid found in tobacco and in pituri, closely related to nicotine (nicotine has a methyl group on the nitrogen in the pyrrolidine ring, nornicotine does not) and similar in its properties. Nornicotine is an effective insecticide.

ONEIROMANCY: Divination by dreams.

OPIOID: Related to opium. The receptor sites in the brain that bind with morphine are called opioid receptors.

ORGANOLEPTIC: Involving the use of the sense organs. The old flavorists relied upon organoleptic testing almost exclusively, and had to train for many years to refine the sensitivity of their noses and palates. Since the invention of the gas chromatograph the art has declined.

PALMATE: In botany, a leaf that is divided into leaflets from a single point at the base. Like the fingers of a hand. Like a *Cannabis* leaf. By contrast, a pinnately compound leaf is divided along an axis, like an acacia leaf.

PAPAVERINE: An alkaloid occurring in small amounts in the opium poppy. Papaverine is a vasodilator, especially of the smooth muscles.

PARASYMPATHETIC SYSTEM: The part of the autonomic nervous system mediated by acetylcholine that stimulates digestion and, with a generally inhibitory effect, restores the body to normal functioning following emergencies.

PEPTIDE: An organic molecule composed of two or more amino acids linked by peptide bonds formed between carboxyl (-COOH) groups and amino ($-NH_2$) groups. Peptides are common byproducts of protein digestion.

PERICARP: In a plant, the wall of the ripened ovary, or fruit.

PHARMACOKINETICS: The process by which a drug is absorbed, distributed, and metabolized by the body.

PHENANTHRENE: An aromatic hydrocarbon composed of three linked benzene rings, and the alkaloids such as morphine and codeine that contain such a group.

PHENOLIC: Containing a hydroxyl (-OH) group linked directly to a carbon atom on a benzene ring. In phenols, the hydroxyl group tends to be acidic rather than basic.

PHENOTYPE: The outward, observable part of an organism, its expression, rather than its genetic makeup (the genotype).

PHYLOGENY: The evolutionary history of a taxonomic group.

POACEAE: The grass family, also called the Gramineae.

PROTEINACIOUS: Containing, or relating to, proteins.

PROTOPLASMIC: Protoplasm is an old, now obsolete, word that biologists used to denote all of the life-stuff inside of a cell before they discovered its constitution in more detail. The word has been largely replaced by *cytoplasm*, denoting all the living stuff inside of a cell except for the nucleus.

PSYCHOANALEPTIC: A drug that produces excitation.

PSYCHODYSLEPTIC: A clearly biased word meant to denote any drug that creates a qualitative alteration of mental functioning, distinct from psycholeptics and psychoanaleptics.

PSYCHOEULEPTIC: Just trying to work within the system. I don't really like the *-leptic* words: *lepsis* denotes seizure, as in *catalepsy*. But if *they* can have psychodysleptics, *I* can have psychoeuleptics, drugs that enhance the functioning of the brain and the nervous system.

PSYCHOLEPTIC: In the system of Delay and Deniker (1961), a drug that induces depression.

PSYCHONAUT: A word first used by Ernst Jünger to refer to explorers of inner space.

PSYCHOTOMIMETIC: A word that means "mimicking psychosis," used by early LSD and mescaline researchers to refer to such drugs. While entheogenic substances can certainly illuminate the general spiritual principles involved in paranoia and other psychological states, few still believe that LSD produces a useful clinical model of such states. As a term to denote the *phantastica* generally, "psychotomimetic" is extremely biased.

PSYCHOTROPIC: Turning or affecting the mind; a neutral and useful term that could be applied to all of the plants in this book.

PUTREFACTIO: In alchemy, a part of the nigredo stage: the dying and rotting of preconceptions.

PYRIDINE: An aromatic ring compound found in coal tar, analogous to benzene, except that the ring contains one nitrogen atom and five carbon atoms, instead of the six carbon atoms of benzene. The word is applied to alkaloids such as nicotine that contain a pyridine ring.

PYROLATION: The act of burning something. Smoking tobacco is ingestion through pyrolation.

QUICKSILVER: Mercury, the metal, and by extension the alchemical principle.

RADIOLARIAN: Marine protozoans with distinctive radially symmetrical silicaceous skeletons.

REFLUXING: Boiling a liquid in a container with a condenser attached, so that the liquid returns to the boiling chamber. In an extraction under reflux, the hot solvent is continuously recirculated through the matter to be extracted. An old-fashioned coffee percolator is a reflux extractor. Technically, the term *percolation* refers to simply pouring solvent through porous matter and a filter.

RIPARIAN: Relating to the banks of a river or stream.

SADDHU: A Hindu ascetic. Some saddhus smoke large quantities of *charas* (marijuana) to worship Shiva.

SCOPOLOMINE: Also called hyoscine; a tropane alkaloid related to atropine, common in *Datura* and *Brugmansia* and other members of the nightshade family.

SEDATIVE: Having a soothing and calming effect, relieving anxiety.

SESQUITERPENE: Unsaturated hydrocarbon compounds common in plants containing three isoprene units, $C_{15}H_{24}$. Cf. diterpene.

SESSHIN: "To meet the mind," an intensive meditation training retreat in Zen Buddhism, varying in length but commonly lasting seven days.

SETACIOUS: Characterized by bristles or stiff hairs, setae.

SOLANACEAE: The nightshade family, containing potatoes, tomatoes, eggplant, jimson weed, belladonna, and many other alkaloid-rich plants.

SOMATIC: Relating to the physical body, rather than to the mind, the environment, or a particular bodily organ.

SOPORIFIC: Inducing sleep.

SPASMOLYTIC: Tending to facilitate or induce spasms, especially of the smooth muscles.

SPODOMANCY: Divination from ash, such as divining from the shape of the ash on the end of a cigar.

STUPEFIANTS: Agents that tend to stupefy or dull the senses.

SYMPATHETIC: The sympathetic nervous system is part of the autonomic nervous system (cf. parasympathetic system). Mediated by epinephrine or norepinephrine, the sympathetic division is centered in the midportion of the spinal chord and excites many bodily functions for flight or fight emergencies.

SYNCRETISM: Combining various different and distinct systems of thought or belief into a new hybrid system.

SYNERGISM: Interaction of several agents or forces that results in an effect greater than the sum of the parts.

TAXONOMY: The science and study of systematic classification, especially of biological organisms. The great saint of the discipline is Carolus Linnaeus, to whom Erasmus Darwin wrote a charming book-length poem. According to one eccentric philosopher who writes about love, Dionysus, and the psychoanalysis of history, taxonomy is the mark of an "anal retentive." Novelist Jim Dodge once said that his personal idea of hell was to be trapped in a room with two taxonomists on speed. In my experience, at such times, the atmosphere is immensely silent, the only sound being softly popping neurons.

TERPENE: Common constituents of essential oils, containing some number of isoprene units, $CH_2{:}C(CH_3)CH{:}CH_2$. Q.v. diterpene, sesquiterpene.

TETRAPLOID: Containing four sets of chromosomes (4*n*) in the nucleus. Tetraploid hybrids, in contrast to diploid (q.v.) hybrids, are usually fertile.

THALAMUS: A mass of gray matter in the posterior part of the forebrain that relays sensory impulses to the cerebral cortex.

THUJONE: An isomer of camphor found in the essential oils of wormwood, sage, cedar, and tansy; one of the major active ingredients of absinthe.

TOLUENE: A flammable solvent, $CH_3C_6H_5$, used in high-octane fuels and model airplane glue.

TRANSDERMAL: Through or by way of the skin, as in transdermal skin patch, where the medicine is absorbed through the skin rather than being taken orally or by injection.

VAS DEFERENS: The main duct through which semen is carried from the epididymis to the ejaculatory duct. The vas deferens is very sensitive to electrical and chemical impulses, and after surgical removal is often used in pharmacological testing.

VATIC: Oracular, said of seers.

VERMIFUGE: Something that expels intestinal worms.

WORT: A plant; also, the infusion of malt that is fermented to make beer.

WORTCUNNING: Plant knowledge, herbcraft.

XERIC: Adapted to, or characterized by, an extremely dry environment.

ZAZEN: Sitting meditation, especially as practiced by the Zen sect.

REFERENCES

I. COMMENTARY

On the Nature of Poison

The seminal text is de Angulo (1926). More details on Pit River shamanism appear in de Angulo (1950), which was republished by Turtle Island in 1973. Additional material is in de Angulo's unpublished papers at the University of California, Santa Cruz, including portions of *La Psychologie Religieuse des Achumawi* in English.

See also Freeland (1923) for Pomo concepts of doctors and poisoners.

On poison and spiritual practice, we assume that the reader is fully familiar with the various warnings, precepts, and outright condemnations against using certain, some, or all drugs within a spiritual discipline. That is our beginning point. That, in spiritual practice, one should avail oneself of traditional methods and teachers seems almost too obvious to restate.

Plant People

Prusinkiewicz and Lindenmayer (1990) cover the mathematical generation of plants. The book has a comprehensive bibliography. Goethe would have found this book of extreme interest.

Riedlinger (1982) presents a fascinating account of Sartre's mescaline experience, and its subsequent effect on *Nausea*.

READY TO HARVEST, JOST AMMON, 1588

Plants as Teachers

Some of the stories and images are based on material from Mamallacta (1990), Miller (1990), and Gallegon (1988). The role of plant teachers in Indian and Mestizo belief systems in Peru is discussed by Luna (1984, 1986) and Luna and Amaringo (1991). Quichua shamanism is discussed in Whitten (1976, 1982). The latter book has a chapter on the role of ceramics in shamanism by women.

More general introductions are found in ethnographies from around the world, too numerous to list here. Ethnographies that focus on particular plants, such as *Lophophora*, will be listed in the sections dealing with the particular plant. Two other books particularly relevant to South American shamanism are Reichel-Dolmatoff (1975) and Taussig (1987). But I take issue with Taussig for positing "magic aids hegemony" as a law of the universe. The position of magic and the magician is more ambiguous, like that of lawyers.

The Nature of the Ally

Background texts on shamanism and spirit helpers are numerous, but Lommel (1967) and Coyote Man (1973b) are of particular note.

With the term *ally*, Castaneda (1968, 1971, 1972), though highly problematical (see De Mille 1976, Noel 1976, and Fikes 1993), is inescapable. Best to consider Castaneda's use of *Yaqui* and *Mescalito* as unfortunate slips in otherwise inspired fiction. Ditto the datura sections. A literary parallel may be found in James Macpherson's *Ossian* poems, which had an important effect on the Romantics, including Goethe.

De Angulo poem quoted from Pendell (1975).

The Mad River Plant

For a pharmacognosy text, I prefer Evans (1989) to Tyler (1981). Lewis and Elvin-Lewis (1977) is a must. Stuhr (1933) is very difficult to find, but is filled with anecdotal pointers of the herbal properties of so many species of plants that for the serious plant hunter of the western United States it is worth some trouble to obtain. Duke (1985) is expensive but reliable, the closest to a "definitive" text that I know of. None of these books mentions *Prunus emarginata*.

The Great Work; Sun Medicine / Moon Medicine

Abandon every hope ye who enter here.

Primary alchemical texts are much more widely available today than they were twenty years ago, but . . . but what?

A few good ones: Paracelsus (1967), *The Hermetic and Alchemical Writings;* Waite 1990, *The Hermetic Museum*. Several translations of Hermes Trismegistus are available. The Chambers translation (Trismegistus 1975), originally published in 1882, has an index and more footnotes on the Greek than does Mead (1964), though Mead presents a much more even and elegant translation. Outstanding is a new book by Copenhaver (1992). Copenhaver translates the *Corpus Hermeticum* and *Asclepius*, which come to about ninety pages, but includes one hundred fifty pages of intensely scholarly notes (almost line by line), more than eighty pages of introduction and bibliography, and sixty pages of indexes: one Greek, one

Latin, and one general. The elegance of Mead's style alone saves the great translator's book from complete obsolescence.

By the seventeenth century alchemy had lost its experimental edge, and began its slide into a Pythagorean rationalism with no praxis, pretty much where it stands today. John Dee was perhaps the last of the alchemical line who was first a scientist. Dee was a spiritualist, but also a mathematician, cartographer, and inventor. According to plant person and hermeneutic scholar Paul Lee (1994), Dee's inventions contributed to the defeat of the Spanish armada. Dee, his countryman Robert Fludd, and Michael Maier in Germany were all associated with the Brotherhood of the Rosy Cross, an international movement that was more political than spiritual, bent on resisting the Jesuits and the Counter-Reformation (Yates 1972).

But how could Rosicrucian physics compete with Galileo, or with Kepler? Johannes Kepler was the true bridge between the two traditions, achieving the seemingly impossible task of encapsulating a Copernican solar system inside of nested Platonic solids. "Geometria est archetypùs pulchritudinis mundi" (Geometry is the archetype of the beauty of the world). Pythagoras could hardly have argued. In the appendix of *Harmonices Mundi,* Kepler attacked the ideas of Robert Fludd, sensing, correctly, that Fludd had abandoned the empirical (Pauli 1955). In the intellectual battle that followed, Fludd's arguments have an oddly modern, "New Age" sound to them; readily dismissive of mere measurements, especially those not in conformance with the beauty of a preconceived spiritual order.

Perhaps the finest book of the Rosicrucian alchemists is Michael Maier's *Atalanta Fugiens*, republished recently by Phanes Press (Maier 1989), complete with a cassette recording of Maier's alchemical fugues.

The Pythagorean/occult alchemical tradition was revived by Carl Jung (1967, 1968, 1976), who applied it to the individuation process. Continuing from Jung, Fabricius (1989) presents a wonderful collection of plates and drawings from various hermetic texts, and an extensively footnoted and indexed commentary based on depth psychology, including discussion of LSD experiences.

The occult/magical alchemical tradition is summarized in Burckhardt (1967) and Burland (1967). McLean (1989) presents thirty alchemical mandalas, any one of which could serve as the basis for a whole system, and describes each one in detail. Fulcanelli (1971) connects alchemy with Gothic cathedrals and cant. Two historical books are Waite (1970) and the new Patai (1994) on Jewish alchemists.

The experimentalists represent one last alchemical thread. They are found today among Rosicrucians and Steiner groups, and spin-offs such as Frater Albertus's Paracelsus Research Society in Salt Lake City. Some of these groups believe in biological transmutation (Hauschka 1966, Kervran 1972) . Kervran believes that certain plants (yeast, for one) can transmute sodium and oxygen into potassium: $^{23}\mathrm{Na} + {}^{16}\mathrm{O} \rightarrow {}^{39}\mathrm{K}$, to cite just one example. Hauschka's vitalism goes even further, claiming to have measured fluctuations in the weight of sealed ampules of seeds, before and after germination, as well as changes in the elemental content of their mineral ash.

Using algebra, some arithmetic, a table of isotopic weights, and Einstein's mass-energy equation, I calculate that even Kervran's minimal transmutation yield of two milligrams of potassium in three days (he claimed that some flasks yielded ten or a hundred times this amount) would produce 46 million BTUs of energy. That corresponds to 375 watts of continuous power over three days, a hot little flask, indeed.

Before summarily dismissing such results as pseudoscience, one should remember the stir created in the physics community by Martin Fleischmann and B. Stanley Pons when they announced their own discovery of cold fusion in Salt Lake City in 1989. In the weeks following their announcement, prestigious laboratories from around the world reported replication or partial replication of the Pons/Fleischmann findings: excess energy, unexplained neutrons. This was Nobel Prize stuff, and theoreticians stepped forward to propose obscure mechanisms to explain what had been a theoretical impossibility the week before. I was ready to cast palladium electrodes myself. As more and more nay-sayers published negative results, some wondered if *intent* might be crucial to the mysterious experiment. I find it comforting that there are physicists who are not such confirmed skeptics that they cannot occasionally go gaga.

One last matter of the plant work. Gregg and Philbrick (1966), in their book *Companion Plants,* describe a Steiner group invention called the "sensitive crystallization" technique – for divining whether two kinds of plants "like" each other, are "allies." The technique involves three petri dishes each containing supersaturated copper chloride solution. A drop of the juice of the first plant to be tested is added to one of the petri dishes, a drop of the second plant to another, and a drop from each plant into the third dish. According to the book, each plant imposes a distinctive crystalline signature onto the pattern of the growing crystals in the dish. If the two patterns of the plants being tested reinforced each other in the third dish into a grander, stronger, and more symmetrical design, the plants were said to be "allies." Conversely, if the two patterns disrupted each other, the two plants should be planted away from each other in a garden. This was the first meaning of "plant ally" that I came across.

The technique was also said to be able to display the relative "health" of biological organisms and fluids. Realizing that the experiments, if true, provided convincing empirical evidence for vitalism, I got as far as buying the petri dishes and reagent grade copper salts. I can't remember why I never got around to the experiments—maybe because I was living in the woods and didn't have a laboratory. These days I only believe in scientific things, like communicating with plants directly.

The best book on the spagyric art, the vegetable work, is Junius (1985). In the forthcoming companion volume to *Pharmako/Poeia,* if we cannot make use of spagyric technique, we may nonetheless avail ourselves of its obfuscation.

Bulrush

Bye (1979) lists a monograph on *bakana* by himself and D. Burgess as "in preparation" for the Harvard Botanical Museum Leaflets. It has not been published, to my knowledge.

Ott (1993), in *Pharmacotheon*, reports that *piri-piri* is parasitized by *Balansia cyperi,* a mushroom. Plowman et al. (1990) found ergot alkaloids in *Balansia* collected in the Amazon and in the United States on *Cyperus*. It is quite possible that *Balansia* also infects *Scirpus atrovirens.* Raffauf (1970a) reports harmaline type β-carbolines in *Scirpus*. The combination on an MAO-I with entheogenic amines could be extremely potent.

Methodology I;
Methodology II

The two most important reference books on hallucinogenic/entheogenic plants are Schultes and Hofmann (1980) and Ott (1993). Schultes and Hofmann is the old standard; Ott's book is more up-to-date and contains a wealth of detail on certain plants not found in the older book. Ott's knowledge is encyclopedic and eccentric, and *Pharmacotheon* may have the most extensive bibliography on his subject ever collected.

The matter of terminology is not settled. Schultes uses *hallucinogenic,* Hofmann still uses *psychotomimetic,* while Ott is the leading champion for *entheogenic.* Others use the dreaded word, *psychedelic.* I prefer to waffle, as mood and context strike me. Mushrooms may be entheogens, but LSD, according to my young informants, is still psychedelic.

Entheogen is an excellent word, well formed and with attested classical foundation. But I strongly object to Wasson's statement that we must use it because, unlike *psychedelic, entheogen* is "unvulgarized by hippy abuse." The desperate campaign to trivialize the sixties as just a bunch of stupid, idealistic "hippies" has been underway for more than twenty years now. This Orwellian rewriting of history has been embraced by a number of intelligent people who should know better. Placing flowers into loaded rifle muzzles is neither vulgar nor trivial.

Rätsch (1992) is broad in scope, containing many psychoactive plants that are not hallucinogens (nor "entheogens"), and each plant is referenced for further reading. A very nice book, recently reprinted in paperback, and an important addition to any poisoner's library.

For general herbals, Duke (1985), though expensive, is probably the most complete and is usually available at good libraries. Grieve (1971) is an excellent source for traditional uses and folklore. Rose (1983) is more contemporary and is also quite good. For coverage of wild plants of the western United States, I trust Moore (1979, 1989, 1993). I've heard that S. Foster's *Herbal Bounty* is good, but it is out of print and I haven't seen it. You also need a book on poisonous plants, such as Fuller and McClintock (1986).

Rinzler (1990) covers the medicinal properties of kitchen herbs.

Ground State Calibration

The world experts here are probably the Buddhists. The Dhyana, or Zen school, in particular, has spent a thousand years ironing out the wrinkles in their grounding practice. The Pali text *Satipatthana-sutta,* the "Discourse on the Practice of Recollection," is a basic text from the lion's mouth. Contemporary books on beginning practice are widely available; qualified teachers somewhat less so. Basic techniques are covered in Aitken (1982), Hanh (1987), Beck (1989), Kapleau (1965), and Suzuki (1970). Similar approaches are to be found in *vipassana* ("insight") and tantric texts.

On Reading the Dhyana Sutra

What I must learn is that all substances lack true substance;
To linger on the No-Residue is to make fresh Residue.
Forget the Word even while it is spoken, and there will be nothing you do not understand;
To tell your dream while still dreaming is to pile vanity on vanity.
How expect the flower-in-the-air also to produce fruit?*
In mirage waters how suppose you will find real fish?
The suppresssion of movement is Dhyana; Dhyana itself is movement;
'No Dhyana, no movement' – that is the Truly So.

– Po Chü-i, translated by Arthur Waley

*[*flower-in-the-air: specks in the eye, illusion]*

Thanatopathia; Tobacco; Pituri; Killing Time

The Macumba song is from Bramly (1975). Bramly is a journalist, not an anthropologist, and had enough integrity to get personally involved in his subject matter.

The outstanding book on tobacco and shamanism is Wilbert (1987), highly recommended. The pharmacology of nicotine is covered in Julien (1988) and Lewis and Elvin-Lewis (1977). Rocio's story based on Gallegon (1990).

Klein (1993) presents a cutting and insightful study of our love/hate affair with tobacco, with a refreshing whimsical edge. Claiming that his book is for "academics or fools," Klein draws on literary, philosophical, and cinematic sources to build his playful case. I especially liked the way he apologized to all those who supported and defended him through his long, non-publishing academic career, only to be presented at last with the prickly, politically uncomfortable *Cigarettes Are Sublime.*

The advertising slogans, and some beautiful posters, are in Heller (1994).

The best articles on pituri are in Watson (1983a, 1983b).

Phenomenological Taxonomy of Psychotropes

See Eddington (1928) for his analysis of the limits of scientific inquiry. I don't think any of the new books on quantum physics and mysticism have surpassed these lectures that Eddington delivered in 1927, the same year that Heisenberg published his famous uncertainty inequality, $\Delta p \Delta q \; h/2\pi$.

Díaz's system is described in Díaz (1979), an excellent article on Mexican "psychodysleptic" plants. Lewin (1931) is a seminal book for the whole field. Lewin published the first chemical paper on peyote. But it was Arthur Heffter who, after being unable to determine by animal experiments which of the several alkaloids he had isolated from the cactus was the active one, performed self-experiments and was therefore the first person to experience the effects of purified mescaline and establish that it was the primary active alkaloid in peyote.

Other ideas on systematics are in Emboden (1979), Fischer (1971), Govinda (1981), and Metzner (1974).

Occult correspondences are based on too many sources to list, but a good start is Govinda (1960), Trungpa (1973), Crowley's "Liber 777" in Crowley (1973), Iamblichus (1988).

Inebriantia; Yeast; Wine; Beer; Aqua Vitae; the Alcoholic Muse

First off, *wine* is the common name for a product of the grapevine, *Vitis vinifera*, not for the plant itself: please indulge my simplification. Ditto for *beer* and *Hordeum*.

Roueche (1960) is a concise and well-researched general history of alcohol. A more detailed history, concentrating on wine, is Younger (1966). McCarthy (1959) is recommended, particularly for the essays on wine and drinking in the classical world. Wykes (1979) is a popular history of beer and brewing, mostly in England. Two excellent books of quotations about drinking are Mortlock and Williams (1947) and Digby and Digby (1988). Hannum and Blumberg (1976) present a comprehensive history of brandies and liqueurs. See Goodwin (1990) for alcoholism among writers.

Animal intoxication is described in Siegel (1989), in an otherwise mostly disagreeable book. Siegel has made a career of studying the "drive" for intoxication among animals. He describes, without the least moral repugnance, an experiment in which two monkeys are placed in a pyramid-shaped enclosure filled with water except for the very apex – just enough air for one monkey – and how the two monkeys fight for the air space until one or the other drowns. In the follow-up experiment, two other monkeys are given LSD, before being placed in the death cage. On acid, both monkeys drowned, each one supposedly deferring to the other: "No, you take it," "No, please, you," etc. The moral that Siegel draws from this is that "with LSD, there are no survivors."

Maybe because this kind of "science" is music to the ears of the Drug Enforcement Administration (DEA), Siegel was one of the few researchers during the Reagan years to receive funding to do research with schedule I controlled substances on human subjects. Siegel testified for the DEA in its effort to schedule MDMA, dismissing the many claims of the drug's therapeutic potential as being "just like those formerly made for LSD."

The Louisiana quotation in the *Hordeum* chapter was recorded by Marina Bokelman.

On the origins of agriculture, besides Anderson (1952), see Renfrew (1973).

Watkins (1978) discusses the role of barley in an Indo-European ritual drink that may have included lysergic acid amides, as suggested in Greene (1992).

On henbane in ale, see Rätsch (1992).

A compelling account of the effects of alcohol on the Iroquois and Huron in the seventeenth century is Edmonds (1968). The paper on the Aymaru drinking custom is by William E. Carter, in Du Toit (1977).

Timor Mortis: William Dunbar; compare also Kenneth Rexroth's "Thou Shalt Not Kill," in his *In Defense of the Earth* (New Directions, 1956).

Aether; Fossil Fuel

Much of the pharmacology is from Blumgarten (1944). The history of ether use is found in Brecher (1972), Blum (1969), and High Times (1978). Allen Ginsberg's poem is in *Reality Sandwiches,* Ginsberg (1966).

National Institute on Drug Abuse (NIDA) Monograph 129 contains up-to-date information regarding toxicity of hydrocarbon solvents.

Mead and Divine Madness

Gimbutas (1974) mentions the bee goddess. Kerenyi (1976) writes of bees, honey, and mead in more detail. Younger (1966) has a few paragraphs on metheglin. Also see Virgil, *Georgics, IV.*

Balché use is described by Rätsch (1992).

On the Seduction of Angels

The Nahuatl poem is from Leon-Portilla (1992).
The Rilke line is from the "Second Elegy" in the *Duino Elegies.* For "Sammael/Sam-el," see Davidson (1967).

Absinthe

The best book on absinthe in English, on which much of my historical material is based, is Conrad (1988). The book is filled with literary history, anecdotes, and reproductions of some of the many paintings inspired by the *la feé verte.* If you buy only one book, get this one.

On *Artemisia*, see Gary Snyder's beautiful poem "Earrings Dangling and Miles of Desert" (Snyder 1991). It will appear in *Mountains and Rivers without End*, a striking example of poetic convergent evolution. More on the mythology of wormwood is found in an article by Albert-Puleo (1978).

I think the thesis presented in Arnold (1988, 1989), that van Gogh became addicted to terpenes by drinking absinthe, and for that reason licked his paintbrushes, is untenable. There is no corroborating evidence that an absinthe habit (Arnold uses the word "addiction") leads to a craving for other terpenes. Nothing in van Gogh's paintings resembles the visual effects produced by absinthe, but the swirling colors may indeed reflect the effects of heavy metal poisoning. On the other hand, impressionism generally may indeed reflect the brightening and mottling effects of absinthe on the perception of color.

More recipes are in Dick (1903), Rack (1863), and Delahaye (n.d.).

I have recently learned that there is an absinthe society in the United States, whose members meet from time to time to exchange lore and homemade liqueurs. Reports I have heard of Portuguese absinthe sound as if it is of very low quality, probably made from alcohol and essential oils. I've seen some absinthes that merely steep wormwood in alcohol, without distilling it. On the other hand, the absinthe being served now in Prague sounds like the real thing, though my informant saw no absinthe spoons and drank his potion neat.

Calea zacatechichi

More information on *Calea* is in Duke (1985), Schultes and Hofmann (1980), and Ott (1993).

Euphorica; Opium; Heroin and the Nature of Addiction

Thomas De Quincey is almost a cliche, but worthwhile. There are two versions of *Confessions*. The original (De Quincey 1950) was published by Heritage Press in 1822 and is less than half the length of the revised version Dent published in 1856 (De Quincey 1982), and is in almost all cases the more cogent of the two. Baudelaire (1971) devotes the last half of *Artificial Paradise* to discussing De Quincey's work. Cocteau (1958) is a worthy successor to those two classics.

The prehistory of the poppy plant is studied in Merlin (1984). A very fine botanical work on the genus *Papaver*, including keys, is Grey-Wilson (1993).

Chemical properties of the opium alkaloids are in Bentley (1954) and Small and Lutz (1932). Atal and Kapur (1982), published in India, contains articles on the chemistry, biochemistry, pharmacology, and extraction of the alkaloids, and on cultivation of the poppy. Nice book. Also published in India is Husain and Sharma (1983), covering cultivation, international markets, harvesting, poppy straw extraction, and alkaloidal extraction from opium. Addens (1939) focuses on the legitimate opium trade, but has some information on extraction. Small press books dealing with cultivation and harvesting include Drake (1974), Griffith (1993), O (1979), and the recently published Hogshire (1994).

Social history is found in Aldrich (1979), newspaper clippings from 1859 to 1950 dealing with narcotics and marijuana; Berridge and Edwards (1987), about nineteenth-century England; Courtwright (1982), which claims that the mean economic status of morphine users was declining even before it was outlawed; Hayter (1988), the classic study of the romantic poets who used laudanum; and Palmer and Horowitz (1982), which presents writings on the drug experience by women. Latimer and Goldberg (1981) is a more general history.

McCoy (1972) looks at the role of the United States government in the heroin trade in Southeast Asia. This book also describes the acetylation reaction. *Ramparts* and Browning (1972) contain essays on other political aspects of the heroin trade. Westermeyer (1982) is an interesting and well-researched account of opium use in Laos.

Detzer (1988) is the story of a social worker who gets addicted to poppies, with good descriptions of scrounging for poppies in the Pacific Northwest.

In the matter of addiction and recovery, I like Lydon (1993), filled with scenes and events of the sixties and seventies that will evoke many stark memories in those old-timers who survived that epoch. The question of addiction in a more general sense is in Leonard (1989) and other books in the bibliography. Other accounts of the narcotics problem are addressed in Brecher (1972), Blum (1969), Kohn (1987), and Krivanek (1988).

That leaves fiction (Algren 1949), semifiction (Burroughs 1959), and nonfiction autobiography (Pepper 1979). All good.

On the price of alcoholism in the United States: the U.S. Public Health Service in 1990 estimated the cost of alcoholism to society to be 130 billion dollars ($130,000,000,000.00). Thirteen percent of this figure consists of direct health care costs, and 60 percent is lost wages and productivity. It is difficult to put a dollar figure on the violence and abuse that occur inside alcoholic families. Few of these costs would result from the same level of societal addiction to narcotics. Eliminating the 16 billion dollars of direct health costs would be a double savings, for that sum would be deducted from the costs of health care and added to the money that would be available for other expenses. The absence of narcotic abusers from mental health hospitals is well documented. On the amount of lost wages and productivity that would be caused by ten million Americans' being addicted to narcotics, we have little information. But it should be noted that William Halstead, the "father of modern surgery," was a morphine addict all through the most productive and creative years of his life.

But this is all moot speculation. Before any such experiment occurs, you will be reading this book in translation from an extinct tongue.

Kava Kava *Kava: The Pacific Drug,* by Lebot, Merlin, and Lindstrom (1992) is the best book on kava, by far. The book is the second volume of a projected series called *Psychoactive Plants of the World* from Yale University Press, general editors Richard Evans Schultes and Robert F. Raffauf. *Kava* is a model of the finest of ethnobotanical research and writing, as was the first volume of the Yale series, Wilbert's *Tobacco and Shamanism in South America* (1987). May the series continue!

A fine book on general Polynesian ethnobotany is Cox and Banack, *Islands, Plants, and Polynesians* (1991).

Ska Pastora The number of articles on *ska Pastora* has almost doubled since the original draft of this book was written. Still, *ska Pastora* remains an obscure plant. The availability of salvinorin A will doubtless create a momentary stir among those looking for new psychonautical experiences, but besides the novelty, most people are interested in more pleasurable experiences. Hopefully, the authorities will let such experimentation run its course.

What is not needed are articles such as the one by Valdes (1994), waving red flags that "both *S. divinorum* and salvinorin A are prime candidates to become drugs of widespread use . . . more attractive than trying to synthesize LSD or phencyclidine derivatives." Valdes's paper exemplifies the problems inherent in the "hands off" approach to studying sacred plants. He is unable to make any differentiation between the plant allies of class *existentia* and class *phantastica*. He warns about emergency room visits when none have yet occurred. He thinks that because salvinorin A is a substance of great power it will necessarily become a popular drug, even though it is clear that he himself has little interest in or attraction to the experience. That said, I agree fully with Valdes when he concludes, "The extreme potency of salvinorin A could readily lead to overdosing and its associated problems." Though what the "associated problems" are is rather vague. Still, a person changing into a bear is not to be taken lightly.

The titles of the *Salvia divinorum* articles are self-explanatory. Hofmann (1980, 1990) describes his visit to Maria Sabina with his wife and Gordon Wasson. More ethnopharmacology is in Valdes (1983, 1987, 1994). The chemistry of salvinorin is in Valdes (1984, 1994), Ortega (1982), and Siebert (1994). Siebert was the first to publish on the human psychoactivity of salvinorin A. Reisfield (1993) describes the botany and taxonomy of the plant.

Marijuana The *Cannabis* literature is extensive. General discussions are in Schultes and Hofmann (1979) and Emboden (1979). The best general history is Abel (1980). Ancient history is outlined in Aldrich (1977) and in Aldrich's article in *High Times* (1978). Sloman (1979) tells some behind-the-scenes stories of Anslinger and marijuana prohibition.

The medicinal aspects of marijuana, which we barely mentioned, are found in Grinspoon and Bakalar (1993). A sociological look at marijuana is in Novak (1980); this book also contains a good annotated bibliography. Pharmacology is discussed in Nahas (1984), but look for rebuttals and arguments to his conclusions in Brecher (1972), Conrad (1993), Goode (1993), and Petersen (1977). Nahas's relationship to Waldheim is in Conrad (1993).

Both Gold (1993) and Starks (1990) cover the chemistry, Gold focusing on chemical modifications of CBD and THC. The best book on cultivation is Frank and Rosenthal (1990).

Rubin (1976) is an excellent collection of essays on social and cultural aspects of marijuana use. The nature of the high experience is explored in Tart (1971) and Berke (1974). Ebin (1961) and Solomon (1966) are anthologies of literary writings about *Cannabis* and other psychotropic substances.

Some of the supposedly classical references to hemp often cited in the literature are doubtful. Schultes and Hofmann (1979) state, "In Thebes, Hemp was made into a drink said to have opium-like properties." After much scouring, I can only conclude that this assertion is based on a sentence in Diodorus (1:97:3) in which he is trying to prove that Homer spent time in Egypt by stating the Theban women still, in his time, drink nepenthe. So "Thebes" refers to the Egyptian city, not the Greek city, and the drug in question is nepenthe, the drink of the forgetting of sorrow, not likely to be hemp.

In the same book the authors state that Democritus refers to hemp's being "drunk with wine and myrrh." Schultes and Hofmann are probably echoing William Emboden (1979), who identifes *potamaugis* with hemp. I find the identification unlikely. The only reference I have found is in Pliny (XXIV: 164). Pliny lists a series of plants from a lost book of Democritus called *Chirocmeta*, all of which may be fabulous. *Potamaugis,* "river gleam," also called *thalassaegle,* or "sea brightness," supposedly causes men to rave, seeing weird visions. The plant is said to grow on the banks of the Indus. Nothing about it sounds like hemp to me. Emboden confused this plant with the "leaves of laughter," mentioned in a following paragraph, which, indeed, is said to be taken with myrrh and wine. If anyone can perfect this "myrrh and wine" mixture, please let me know; THC is notoriously insoluble in aqueous solutions.

Footsteps of the Green Man Most of my information about the Green Man in Europe, and especially about the Green Man in English and Continental churches and cathedrals, is from William Anderson (1990), supplemented by Raglan (1939) and my own observations in Spain. Anderson's book, *Green Man*, is excellent, containing superb photography by Clive Hicks and a well-written and thoroughly researched text. The cloth edition is out of print, but a paperback edition is available from HarperCollins.

More information about the "miscellaneous plants" is available from the usual gang of suspects: Duke (1985), Rätsch (1992), Ott (1993), Schultes and Hofmann (1980), Grieve (1971), and Moore (1979, 1989, 1993).

For the Dionysian thread see Otto (1973), Detienne (1989), Kerenyi (1976), Danilou (1984), and Brown (1959, 1966, 1991). And, of course, Nietzsche.

The L.S. quote about the English tavern signs is in Mortlock and Williams (1947).

Hildegard of Bingen (1985) reproduces twenty-five of her illuminations, along with commmentary by Matthew Fox.

The story of Thomas Morton and Merrymount can be found in Horowitz (1978) and other histories of the early colonial period. Merrymount is also the subject of a story by Nathaniel Hawthorne and a piece by William Carlos Williams in *In the American Grain*. Morton's own version of the story is in his book *New English Canaan.*

A striking painting of "La Serpiente de Metal" by Sebastien Bourdon (1616–1671), depicting the snake hanging from a crosslike pole, is in the Prado in Madrid.

Much more of Norman O. Brown's "Daphne" could have been quoted with relevance, but is better enjoyed in its own context (Brown 1991).

Nitrous Oxide The best book is Shedlin, Wallechinsky, and Salyer (1992). Besides history and the editors' own wealth of experience and insights, the book contains substantial excerpts from Davy and from Blood, which are very hard to come by.

Health risks are covered in the Sharp (1992) monograph, somewhat. The bibliography is good.

Internet has proved to be a useful source of information on this topic.

The Poison Path II The koan of the "turtle-nosed snake" is in *The Blue Cliff Records;* see Cleary and Cleary (1992), case 22. Case 87 is another koan on medicine and disease. See also case 6 and case 37 in the *Mumonkan* (Aitken 1990b or Shibayama 1974). The Derrida quote is from Derrida (1981). On *pharmaka,* see Empedocles (1992): 27/23. The poem by Heine is quoted by Freud in "Narcissism." Shiqi Xinyue has been translated by Cleary (1990).

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II. ILLUSTRATIONS

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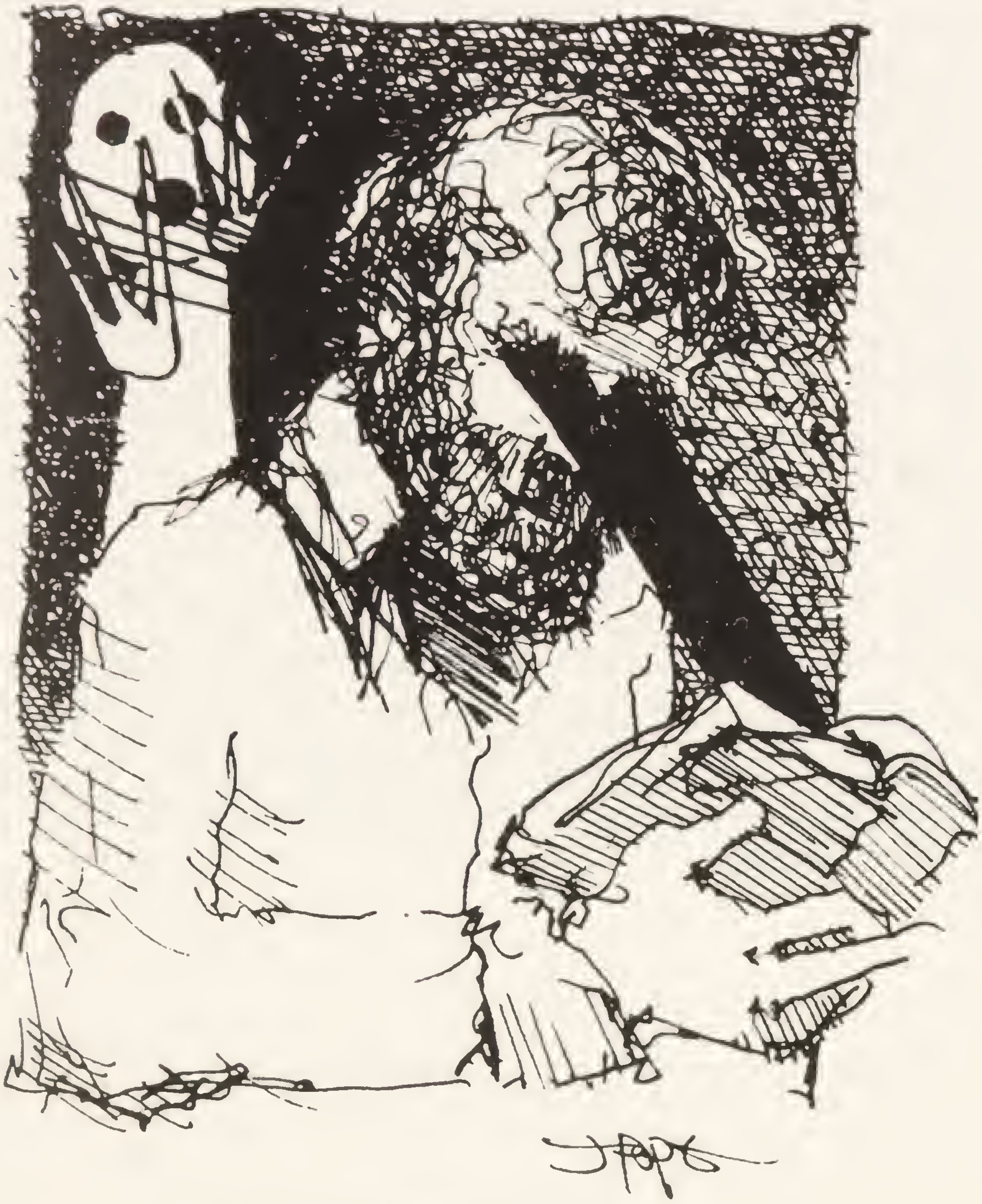

THE AUTHOR AS DRAWN BY JUST POPE

DALE PENDELL is a poet, software engineer, and longtime student of ethnobotany. His poetry has appeared in many journals, and he was the founding editor of *KUKSU: Journal of Backcountry Writing.* He has led workshops on ethnobotany and ethnopoetics for the Naropa Institute and the Botanical Preservation Corps.

GARY SNYDER is the author of numerous books of poetry and collections of essays. In 1975, he received a Pulitzer Prize for his book *Turtle Island.* He has long taken an anthropological and poetic approach to the relation between nature and human culture.

Plant student Dale Pendell established himself as one of the foremost popular exponents of shamanic ethnobotany with his unprecedented *Pharmako* trilogy. A noted poet, he was the founding editor of the avant-garde magazine *Kuksu* and a co-founder of the Primitive Arts Institute and has led workshops on ethnobotany and ethnopoetics for the Naropa Institute and the Omega Institute. Pendell was part of the Oracular Madness theme camp at Burning Man for a number of years (his book *Inspired Madness: The Gifts of Burning Man* was published by Frog Books in 2006). Also an experienced computer scientist, he lives with his wife Laura in California's Sierra foothills.

Foreword author Gary Snyder is well known as a Pulitzer Prize-winning poet and Beat-era associate of Jack Kerouac and Allen Ginsberg and as a pioneering environmental thinker and activist.

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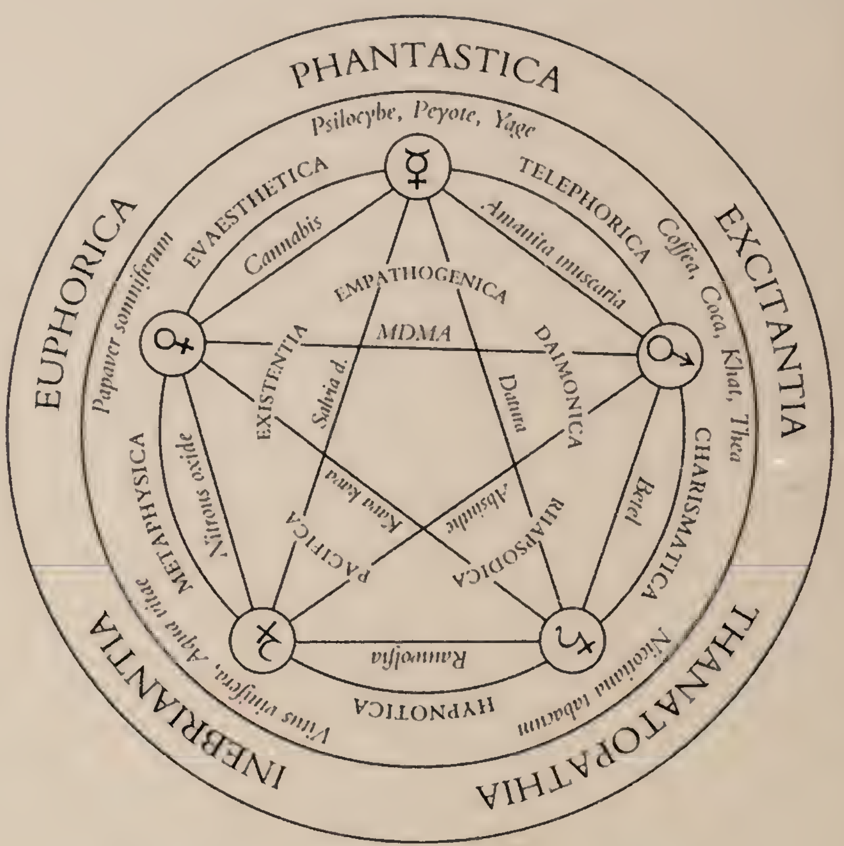
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DALE PENDELL

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This is the second volume of North Atlantic Books' hard cover edition of Dale Pendell's *Pharmako* trilogy, an encyclopedic study of the history and uses of psychoactive plants and related synthetics first published between 1995 and 2005. The books form an interrelated suite of works that provide the reader with a unique, reliable, and often personal immersion in this medically, culturally, and spiritually fascinating subject. All three books are beautifully designed and illustrated, and are written with unparalleled authority, erudition, playfulness, and range.

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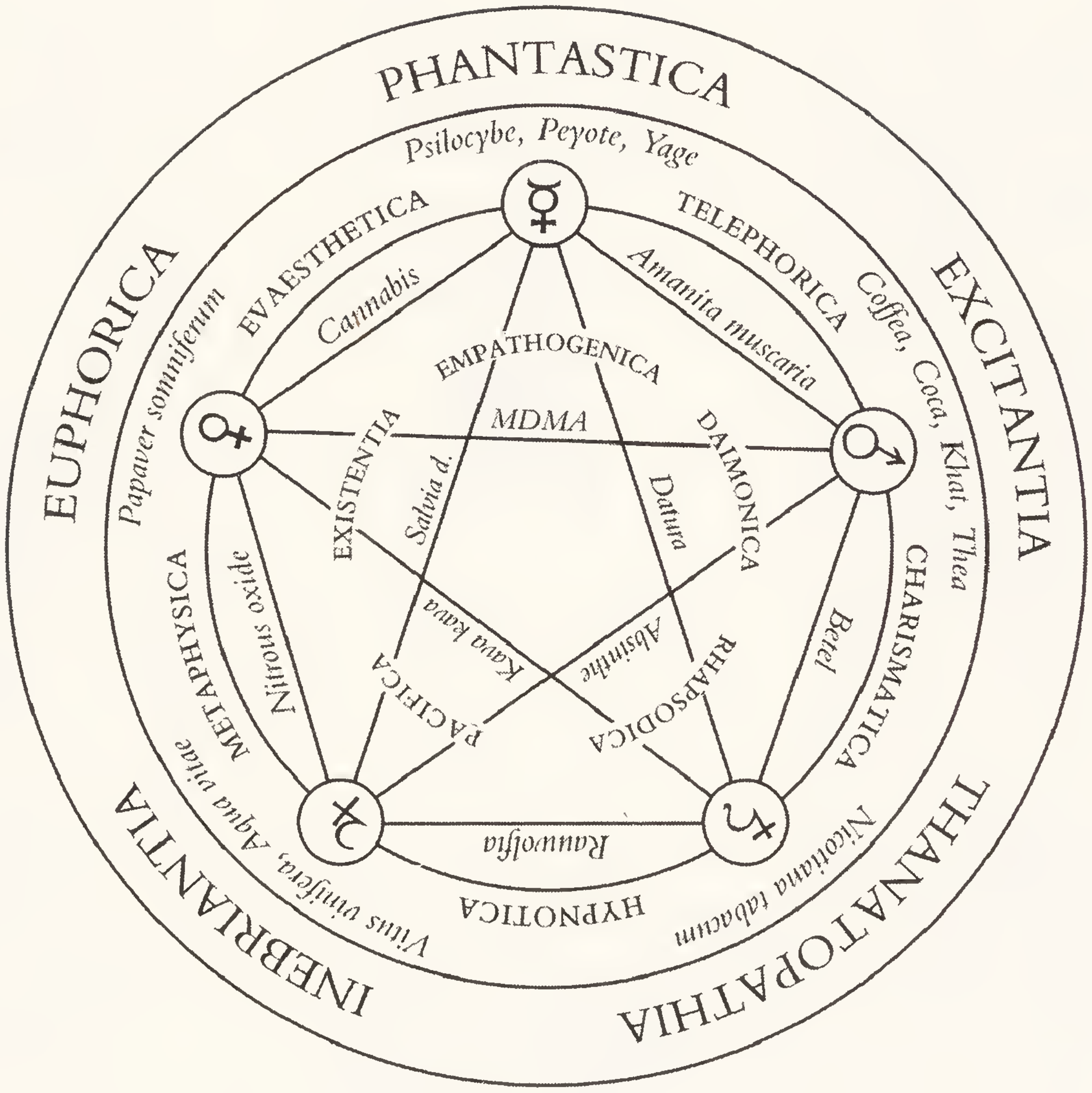
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Amanita muscaria
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Betel
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Nitrous oxide
EMPATHOGENICA
MDMA
EXISTENTIA
Salvia d.
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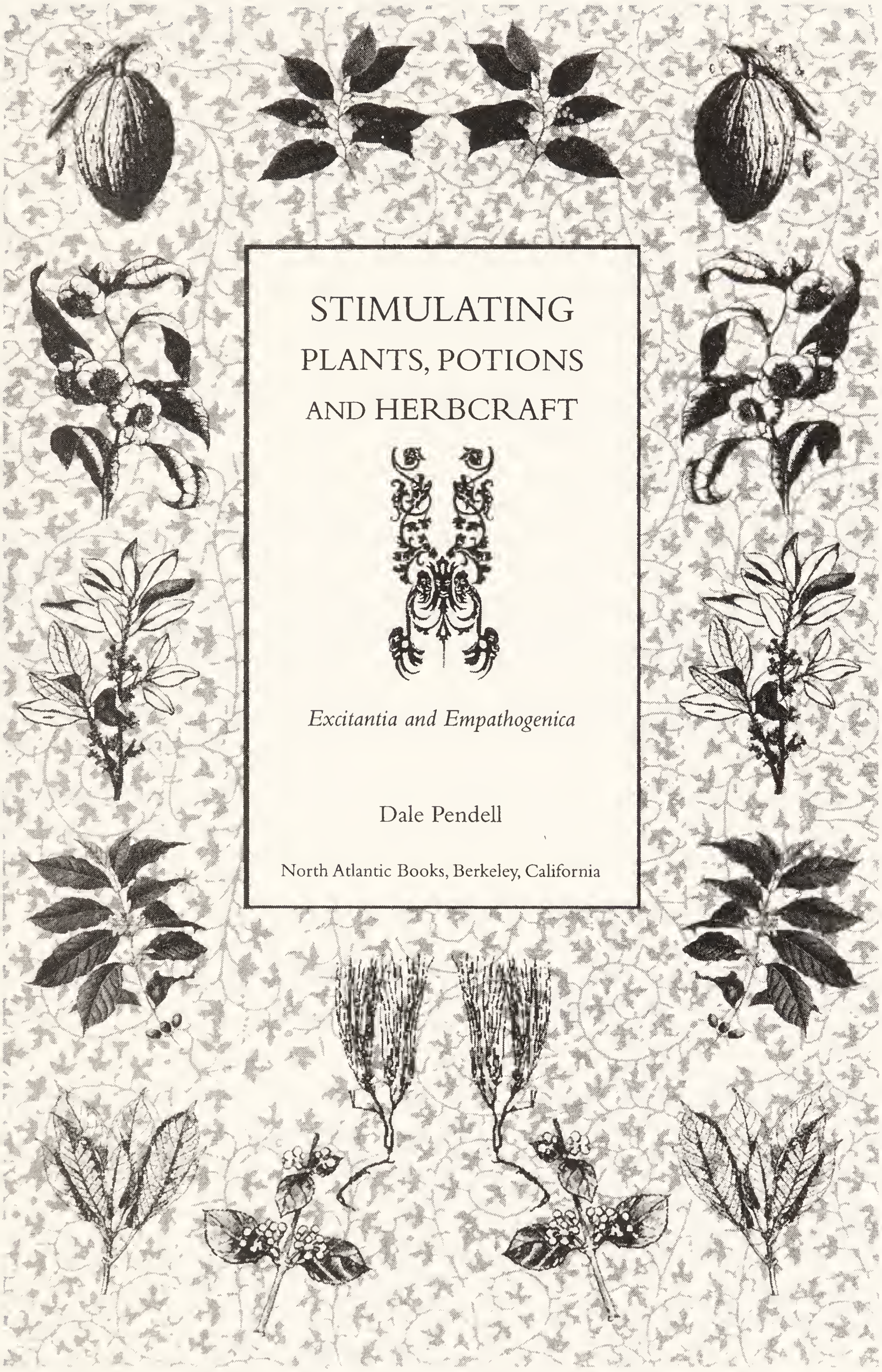

STIMULATING PLANTS, POTIONS AND HERBCRAFT

Excitantia and Empathogenica

Dale Pendell

North Atlantic Books, Berkeley, California

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Publisher's Note: A manuscript draft of *Pharmako/Dynamis* caused us some concern. The author of this remarkable work was clearly exploring perilous terrain along his "Poison Path." This is a route we strongly advise others not to follow (except through this book, and through other approaches that lead in the direction of wisdom without dangerous self-experimentation).

Did we detect a tongue-in-cheek quality in the manuscript? We could see the depth of botanical knowledge, the extensive scholarly research, the learning, the results of years of alchemical practice and dedicated experience, the poetic beauty, the ingenuity of subtly shifting interior dialogues, the peculiar fascination of strange, beguiling perspectives, the dark wizardry of its authorial persona (wise but not without a hint of menace)...

Pharmako/Dynamis makes a contribution to modern poetics and cross-disciplinary study, in the distinguished tradition of the botanical herbal (the tradition launched by Dioscorides in classical times, which reached perhaps its finest flourishing in the early Renaissance); this tradition has influenced our physical presentation of the material.

CAUTION:

This book is an exploration of the "Poison Path." All of the plant substances described in it act on the human body as drugs and thereby as poisons. In many cases there are known and there may also be unknown health hazards involved in their use. The publisher and the author recommend that dangerous or illegal practices be avoided.

This is a literary work that takes as its subject the relation that has existed throughout the world since ancient times between "power plants" and shamanic and literary creation. The authorial voice that appears in it should be considered a fictional persona. The inclusion of recipes, preparations, or dosages is an expression of that fictional voice, and should not be regarded as actual recommendations for usage.

Neither the publisher nor the author assume any liability for unwise or unsafe actions by readers of this book.

For Laura:
patience, support, laughter

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PREFACE

This book, a companion to *Pharmako/Poeia,* is the second in my investigation of the nature of poisons. Psychoactive plants were selected as prototypical poisons, and their history and use bear all the marks of the ambiguity we would expect from the *pharmakon*—the drug—that which is both noxious and healing, medicine and bewitching charm, chemical reagent and the artist's colors.

Books themselves are poisons: revealing, teaching, seducing; the letter of orthodoxy or the seed of subversion. One might find interesting parallels between book-burners and anti-drug warriors: certainly they came together in the Inquisition—and in Pre-Conquest Mexico.

I wanted *Pharmako/Dynamis* to be able to stand on its own, yet it inevitably depends upon certain definitions and metaphorical equations developed in the first volume. Therefore this book, as the first, begins with the nature of poison: trying on the one hand not to repeat, but on the other to establish the background necessary to proceed.

The promiscuous mixing of "hard" science with poetry, and, even worse, the "occult," is sufficiently repellent to true believers of both camps to keep them at a safe distance. Like Mulla Nasrudin's tomb, the gate is heavily locked, but it stands alone: there is no fence. A key is indeed necessary to unlock the gate, but anyone is free to just walk around it. I call this technique "autocryptosis." It seems only fitting that a book about poisons ought be poison itself. The tomb awaits.

The structure is three-dimensional and holographic. Start anywhere. Read backwards. A book is linear by nature, but that is only a single projection—other cut-ups might make more sense. It is said that the whole alphabet can be projected by various turnings of the three-dimensional ur-letter, the Aleph.

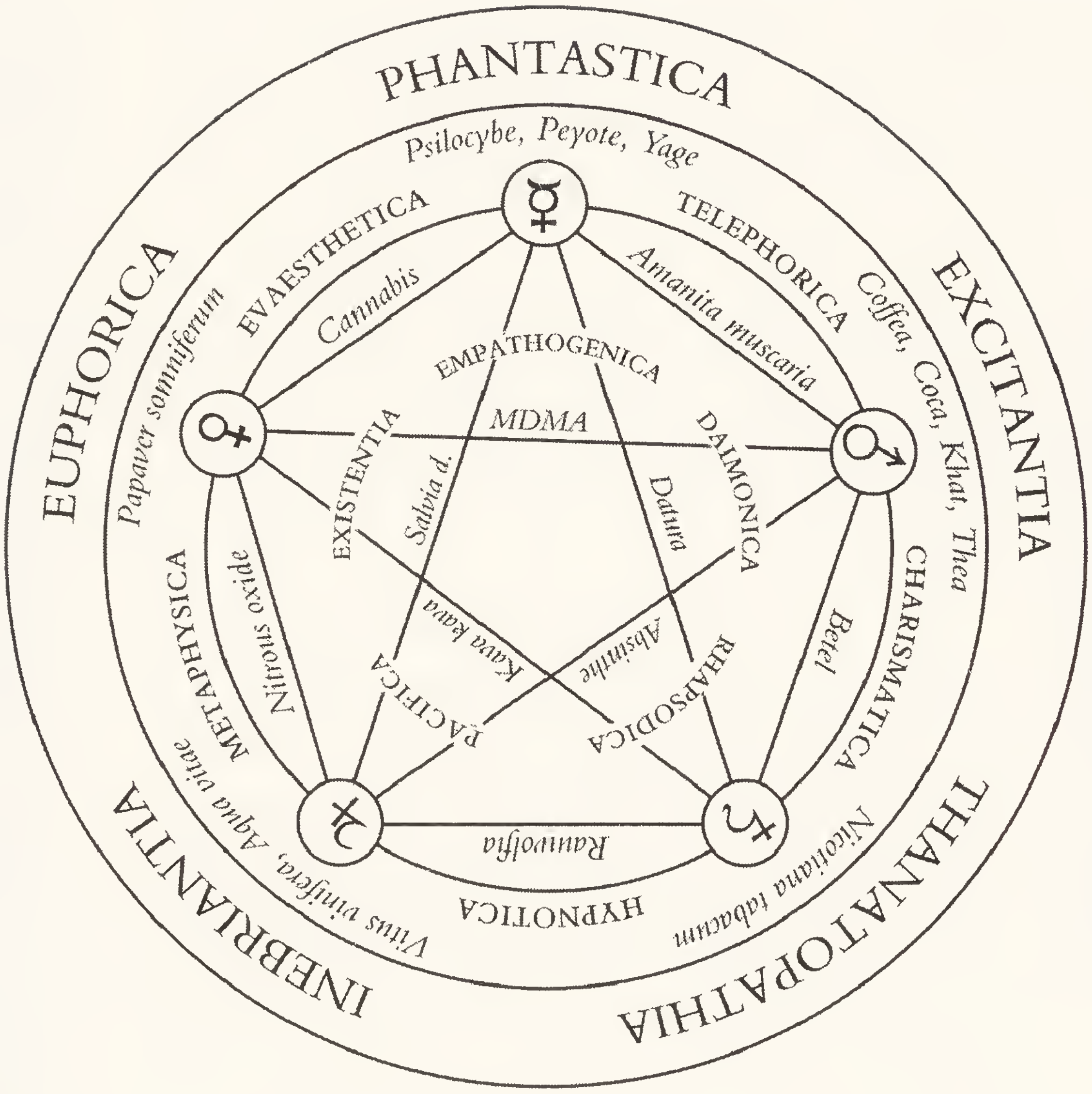
My method, where possible, has been immersion. It has been my hope that the style, the pace, and the general approach of the writing in the different sections would thereby reflect, and perhaps capture in a way beyond what I could predict, the spirit of the subject. (For example, the excitantia chapters turned out being the longest.)

Lastly, it was never my intention to write for everyone.

In which case, I would say, you have scored substantial success.

Thank you, Sweetheart. Good night now.

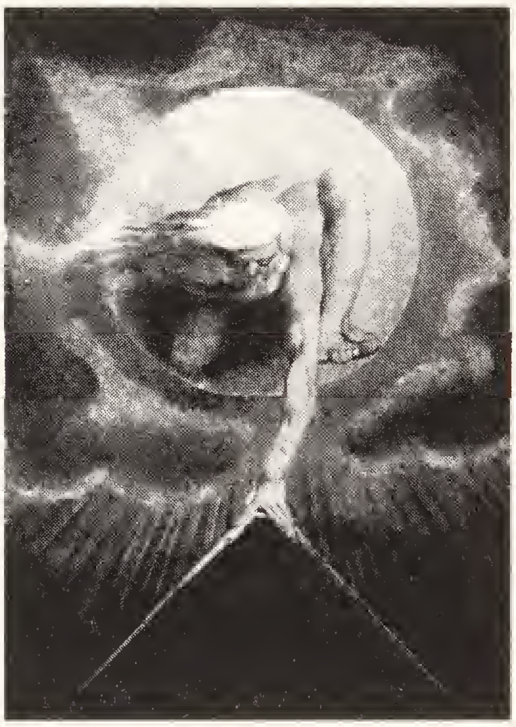
PHARMAKODYNAMIS


PHANTASTICA
Psilocybe, Peyote, Yage
EXCITANTIA
Coffea, Coca, Khat, Thea
THANATOPATHIA
Nicotiana tabacum
INEBRIANTIA
Vitis vinifera, Aqua vitae
EUPHORICA
Papaver somniferum
EVAESTHETICA
Cannabis
TELEPHORICA
Amanita muscaria
CHARISMATICA
Betel
HYPNOTICA
Rauwolfia
METAPHYSICA
Nitrous oxide
EMPATHOGENICA
MDMA
DAIMONICA
Datura
RHAPSODICA
Absinthe
PACIFICA
Kava kava
EXISTENTIA
Salvia d.
☿
♀
♂
♄
♃

ON THE NATURE OF POISON

Pharmacodynamics is the study of the effects and actions of drugs on living organisms. The Greek word δυναμις denotes power and force. Theophrastus used it to refer specifically to the intrinsic properties of plants and Galen used *dynamis* (transliterating upsilon as y) in a book title. And in the sense of power, *dynamis* could also mean medicine, the particular powers or manifestations of divine beings, and, as suits us here, a collection of formulae or prescriptions.

Or incantations



WILLIAM BLAKE,
THE ANCIENT OF DAYS,
1794

Poetry, in the tradition of Baudelaire and Rimbaud, is an example of poison path praxis: that through self-experiment and self examination one can know the taste of water, as they say, for oneself.

Doesn't look like water to me.

In the Gospel of Matthew, Jesus uses the word *dynamis* to refer to His miracles, warning the cities in which He performed them that they would be judged most harshly for not being more impressed. Jesus is also the *pharmakon,* the Medicine, and, obliquely, the *pharmakos,* the scapegoat, the one who heals the village by being sacrificed. The history of power plants, and the fate of their users, illustrates over and again the persistence of this etymological linkage in the realpolitik of modern nation-states.

> *To become wise, one must* wish *to have certain experiences and run, as it were, into their gaping jaws. This, of course, is very dangerous; many a wise guy has been swallowed.*
>
> *—Nietzsche*

The *pharmakon* is both remedy and poison: a baneful drug or a medicinal restorative. Homer uses the word both ways. It also means "charm," or "spell," deriving from philtre or enchanted potion (and English "potion," again, is poison—through Medieval French—the first poisons being love potions).

> *O, mickle is the powerful grace that lies*
> *In herbs, plants, stones, and their true qualities . . .*
> *Within the infant rind of this small flower*
> *Poison hath residence and medicine power.*
>
> *—Shakespeare, Romeo and Juliet*

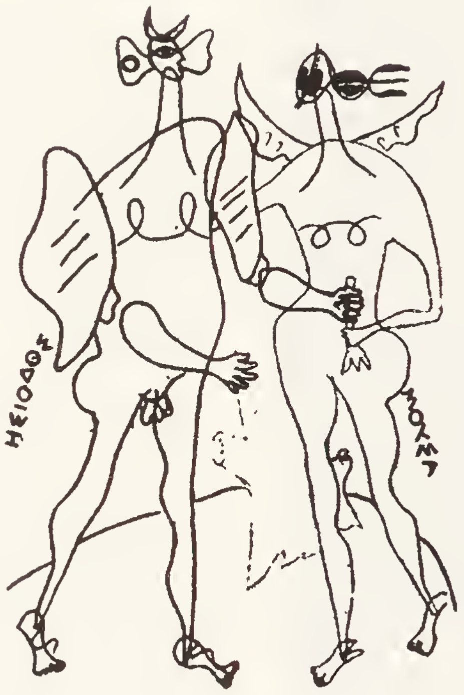
Latin *venenum*, "poison, potion, drug," is rooted in love: Proto-Indo-European **wenes-no-*, Venus. A Sanskrit cousin is *van-*, "desire." In German (also Dutch, Danish, and Swedish), poison is *Gift,* thought to have come to that meaning euphemistically, through marriage, as in Old English *ġift,* the bride price, that which must be paid, and perhaps by analogy to the Greek *δοσις:* gift, payment, or dose of medicine.

We begin with a substance, but we must not end there. We seek the primal poison, the root illness.

> *The prima materia.*

Mother of all suffering, Pandora, the bearer of gifts and the all-gifted, who completed the world as we know it. We might call her Maya. Or the all-suffering mother, Mary, or Kwan Yin.

Opening the jar is the Hermetic pursuit: Hermes inspired Pandora as the Serpent inspired Eve, that mortals might have the gift of knowledge, the poison of the gods.



HESIOD GUIDED BY HIS MUSE, DRAWING BY GEORGES BRAQUE

> *Hesiod's model was the ritual of the "Opening of the Jars" in the Dionysiac festival of the Anthesteria. This ritual was a ceremonial opening of the jars of new wine; the new wine was, according to Plutarch, a* pharmakon: *the word, which is untranslatable, signifies a thing fraught with special magic powers which can produce either favorable or unfavorable effects, according to circumstances.*
>
> *– Norman O. Brown, Hermes the Thief*

The double-edged sword of intellect. Reason as our most spectacular poison, concepts as frozen mind, Huxley's ice cubes. The mind road that builds on itself, arches and walls of verbs and nouns.

> *General and abstract ideas are the source of the greatest errors of mankind.*
>
> *– Rousseau*

But we also forge hammers and drills, wrecking bars.

We can poison like with like, but this method is intrinsically and topologically limited. It is like someone who lives on the surface of a cylinder trying to draw an arrow to the center. We are limited to inference and analogy. At some point we must brave a trip through the *athanor,* the alchemical furnace.

Maya is Mara. The Tempter. The Temptress. In the heat of transmutation, Mara panics. Clinging to wisps of flame, already broken up and half consumed, Mara releases a phantasmagoria of dreams and visions, secrets and powers. Fission triggers fusion. Scattering patterns emerge, imply hidden and deeper structures: lepton trails in bubble chambers, centaurs in clouds, cryptographia on beach sand. The deciphering is more art than science.

The secret meaning of the morning star.

> *If you seek it in forms or colors,*
> *If you seek it in voices you hear,*
> *You are on a false path*
> *And won't find the Thus Come.*
>
> *– Diamond Sutra*

Buddhists are wary of visions, see them as sirens, as will-o'-the-wisps that recede further and further into the swamp when pursued.

魔境

Makyō

Ma, hemp-spirit, Mara, the devil in the phenomenal world. *Makyō* are visions that appear at certain stages of the meditation path.

> *A deep dream of participation in the Buddha Dharma.*
>
> *– Robert Aitken*

The *Surangama Sutra* lists fifty types of *makyō,* ten for each of the five aggregates: form, receptiveness, conception, discrimination, and consciousness. The Buddha states that these visions are harmless, even excellent progressive stages, unless the practitioner believes that they signify complete attainment.

> *As the practiser looks exhaustively into discrimination and it becomes void, he will wipe out birth and death but will not yet attain Nirvana. If he clings to his knowledge of his all-embracing consciousness and so sets up his own interpretation that all grass and plants are sentient and do not differ from men and that after death men will become grass and plants; if he delights in such misconception, he will fall into error . . .*
>
> *– Surangama Sutra*

The *poison doctor* should appreciate this offering of lunar wisdom, without succumbing to belief in its converse.

A grand and most enduring hallucination.

The world is *makyō,* but not nihilistic. Just because nothing exists doesn't mean that nothing is real. Just because they have no reality doesn't mean that they aren't there.

In broad daylight, under the blue sky,
he preached a dream in a dream.
Absurd! Absurd!
He deceived the entire assembly.

— *Mumon*

Who are we, anyway?

Angels, cursed and cast down? Rintrah roaring. Emanations out of emanations, circles and reflections of the Divine, and connected thereto by any of various complicated paths.

Or possibly directly.

Or possibly not. Mu. There is always

that possibility.

The Way of the Poisoner is the Path of *Makyō,* no way around that.

Let the antichrist speak:

Zur Erwägung
Zwiefacher Schmerz ist leichter zu tragen
Als ein Schmerz: willst du darauf es wagen?

For Your Consideration
Double pain is easier to bear
than single pain: do you accept my dare?

– *Nietzsche*

NIGREDO: A TURN OF DARKENING

Start from where you are.
Saturnian verses, step zero.

Let's try to get this right from the beginning.

Fat chance.

Writing versus research, a metaphor there. Which do you do?

Some of both. That is surely the poison path. It's all about dosage.

The research is the lunar medicine: visionary exploration and dreaming dreams. But the lunar medicine needs a substrate, a sounding board—

maybe
a printing press, a greenhouse, a micrometer,
a phenethylamine backbone, a classroom of students.

Something for the medicine to work upon: the substrate is the solar medicine.

a stack of books debating like a council of citizens
a council of citizens fermenting like a barrel of wine
a barrel of wine dreaming like a rack of dresses
a rack of dresses dangling like a toolbelt
a toolbelt smiling like a scalpel
a scalpel dropping like a line of hooks
a line of hooks disappearing like a revolution
a revolution breathing like a forest

like a palette of colors, or a waiting laboratory,
or maybe a kitchen, or just a pad of paper,

an equation condensing like a poem,
a poem listening like a guitar,
a guitar resonating like a stack of books.

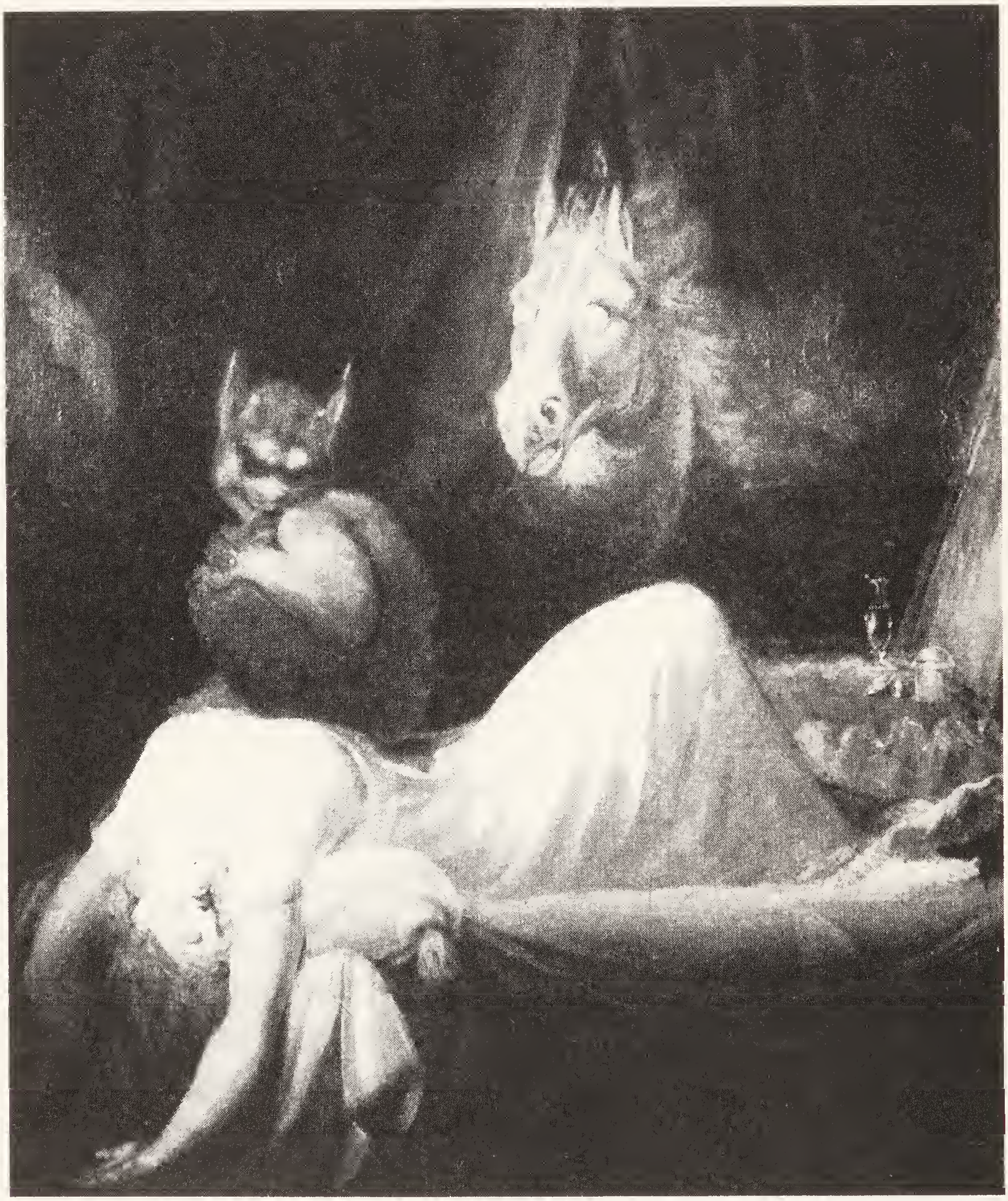
¡Basta! señor. As the man said. Enough.

It is clear that the poison path has to do with a certain excess. Hyperbole: what is the alternative to dying a thousand deaths?

Madness!

That poisons are excessive is almost tautological. In this sense the poison path goes beyond aesthetics.

vomit bowls, etc.
joint in one hand, cigarette in the other,
glass of wine held by the teeth—
now say something cute . . .



JOHN HENRY FUSELI, THE NIGHTMARE, 1785–1790

Conceivably the rupture with aesthetics is a fatal flaw. It is all an argument with Keats. Was Phryne innocent because she was a ten?

Blake answered with a darker beauty, violent and passionate. Camille Paglia calls it chthonian beauty.

I am your Rational Power O Albion & that Human Form
You call Divine, is but a Worm seventy inches long
That creeps forth in a night & is dried in the morning sun
In fortuitous concourse of memorys accumulated & lost
It plows the Earth in its own conceit, it overwhelms the Hills
Beneath its winding labyrinths, till a stone of the brook
Stops it in midst of its pride among its hills & rivers

—Jerusalem 33:5

This subtle stone of the brook is the Great Stone of our quest. We can take a hint from Blake that however spiritual and ethereal the journey becomes, there is a crucial material connection.

The chthonic is the human.

Humus / Homunculus.

We are grooms, the earthlings. The earth as a bride. Not property, but a joyous relationship of mutual respect and love.

In spite of . . .

Yes. We all know in spite of.

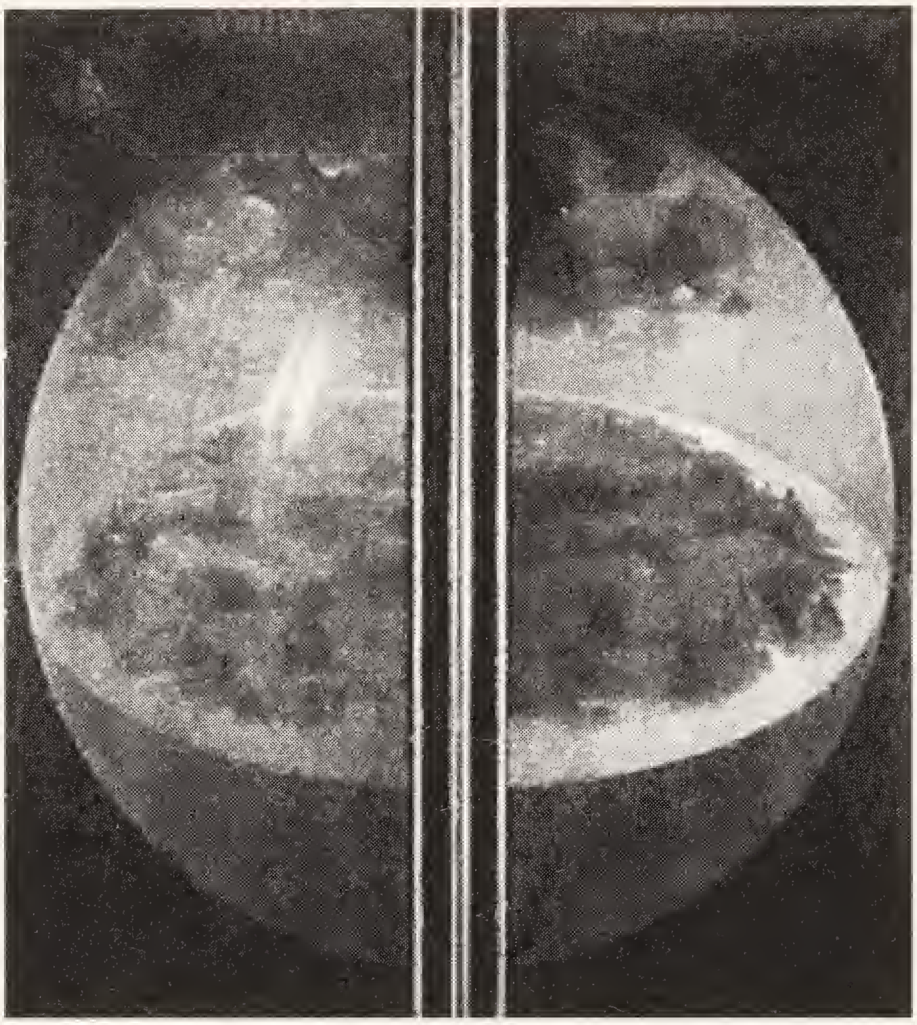
In spite of the reality.
Because what you think is reality
is more like a ripening plum,
malleable and filled with metamorphoses.
That is why we can say "in spite of."

Still, it is well not to be smug.

One should not be too right if one wants to have those who laugh on one's side; a grain of wrong actually belongs to good taste.

—Nietzsche, Beyond Good and Evil

You, would-be Master of the Universe; you, who still remain (the others are outside having *fun*), be like Faust and proceed.



CREATION OF THE WORLD
BOSCH, C.1500

SPEED LIMITS

Reason is temporal: it takes time and has duration. It is a line rather than a point, or perhaps a column, with breadth as well as length, like a regiment of infantry on the march.

Age of Reason. Age of Stimulants. A reasonable universe replacing a rational cosmos. Exotic. Global. Globe, a spherical surface, latitude and the quest for longitude: the chronometer. Space curved and closed, and time changed forever. From forever. A new idea, essentially: time in passage, the quantification of duration.

Stimulants eclipsed the Age of Exploration. Speed and destination instead of the meandering looking about of a scout in unmapped territory. A closing of periphery. Mercantilism. The trading ship: nothing to see on the voyage, nothing but straight ahead. Destination. Goal directed.

The meeting of the continents: Africa, Asia, the "New World," all tied to Europe by vectors of commerce. Speed. Spice. The Great Stimulus.

Tobacco led the advance—coffee, tea, chocolate, and coca followed. Coffee from Arabia, tea from China. Chocolate from Mexico. Coca from Peru.

Coffee, tea, and cocoa all arrived in London the same year.

The poisons followed the Hour, like attracting like. They followed the clocks and shared quarters with hours and minutes.

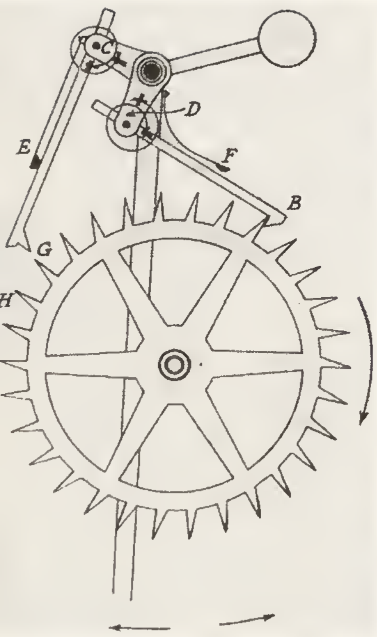
The Hour had made a few sporadic appearances before the seventeenth century, but generally the Hour was a variable—day and night were each twelve hours, regardless of duration. People moved by bells and chimes.

The clock was the triumph of abstract reason. Of rationality.

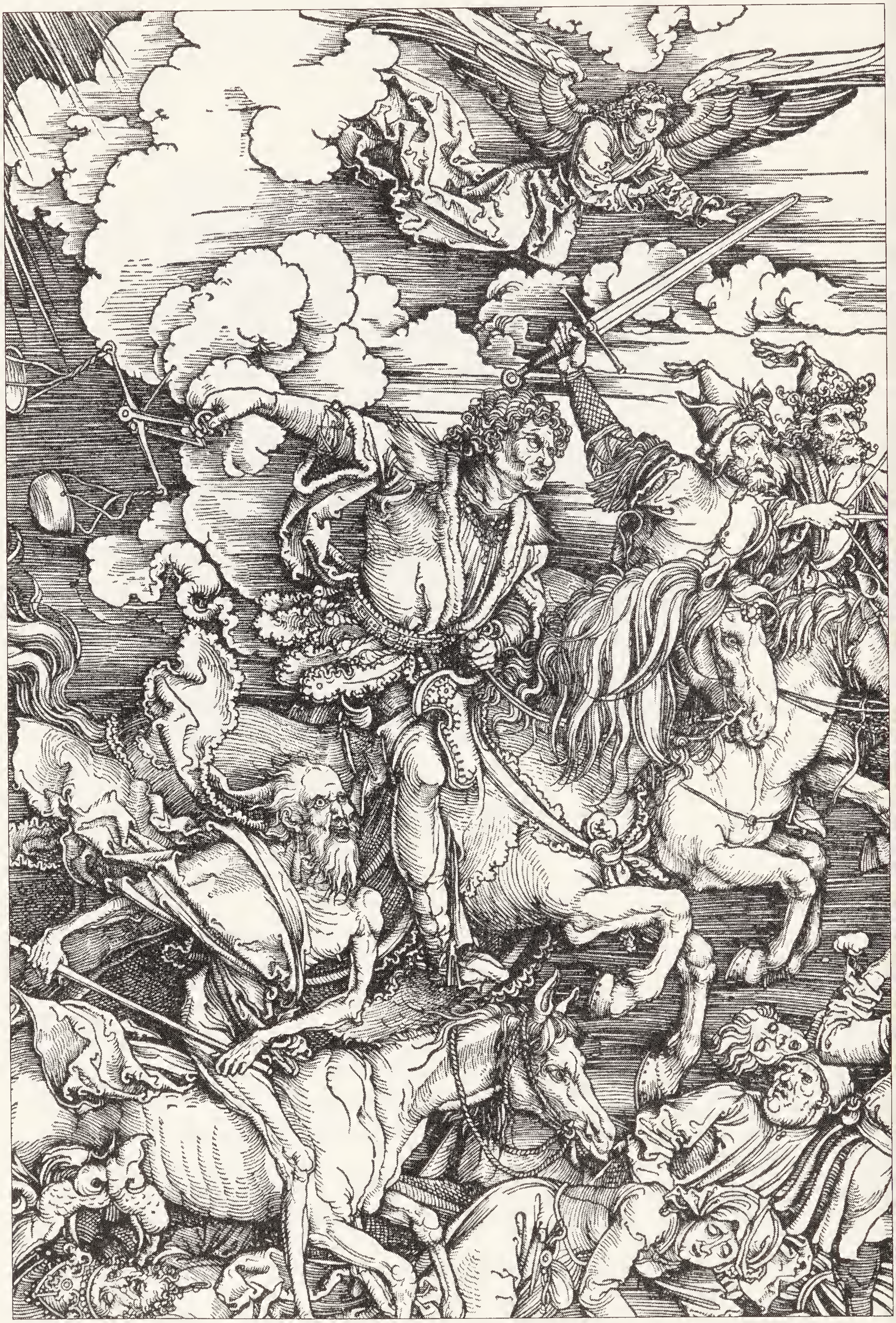
Tempus. Clepsydra. The sandglass. Clock-time.

Verge, balance, to lay an artificial grid on the flowing surface.

As the origins of tea and coffee are rooted to religious practices of the Buddhists and Mohammedans, so the escapement, that most essential ingredient of a mechanical



HARRISON'S
"GRASSHOPPER"
ESCAPEMENT



ALBRECHT DÜRER, THE FOUR HORSEMEN OF THE APOCALYPSE (DETAIL), 1498 clock, grew out of the monasteries—from the need for schedule, that the moment be mastered by will and reason.

Punctuality.

Time measured, moderated: thus Temperance, with her measuring pitchers, came to be portrayed with a sandglass, and finally with a clock.

Punctuating, like periods: the clock as the first digital machine, the heart of the automaton. Hours, seconds. Gigahertz. Time become mechanical.

The escapement like shamanic balance, shifting feet with the pendulous moment, singing a new myth, the measures at once discrete and continuous.

Or are they? Are they anything at all?

> *The surest poison is time.*
>
> *—Emerson*

The aristocracy was both the first to own clocks and the first to drink coffee. The burgher class followed, between 1650 and 1700, taking to both with enthusiasm. Coffeeshops abounded.

By the eighteenth century, prices had dropped enough to allow time and its stimulating servants to be accessible to everyone.

There were a few dissenters. John Wesley preached against indulgence in the new stimulants, and coffee was prohibited for awhile in Germany. But by and large coffee, tea, and the clock were embraced by the Calvinist Protestants and the emerging bourgeoisie.

Marx called the clock the first automatic machine applied to practical purposes. Lewis Mumford said that the clock, not the steam engine, was the driving machine of the Industrial Revolution. The essence of clock-time is discretion—the triumph of the natural number system. Metronome strobing event.

"Time is money" articulated by Franklin, an early coffee lover.

Even in the Andes, the stimulant had a punctuating function. The quid itself is a measure of time, distances measured by the number of chews required to traverse the terrain.

Surplus time. Alienated time. Hourly wage instead of a days work. And the ally promised more: an extra hour, extra focus, extra endurance. Work into the night.

Speed is the essence of modernity.

> *It is our principal and ruling poison.*

Stimulants were the perfect drugs for capitalism.

They substituted for food. They were the mill to squeeze time out of the body, and the clocks were the scales on which to weigh it.

Speed is a scalar, it lacks direction. It requires a narrowing of focus, to stoke the engines and let them go.

> *head-tripping*

Hacking. Rapping.

> *the point being that we know what IT is and we know TIME and we know that everything is really FINE.*
>
> *—Jack Kerouac, On the Road*

There is some antagonism between Excitantia and Inebriantia. Coffee and tea were much less successful where wine was well established. And conversely, wine made little headway in China.

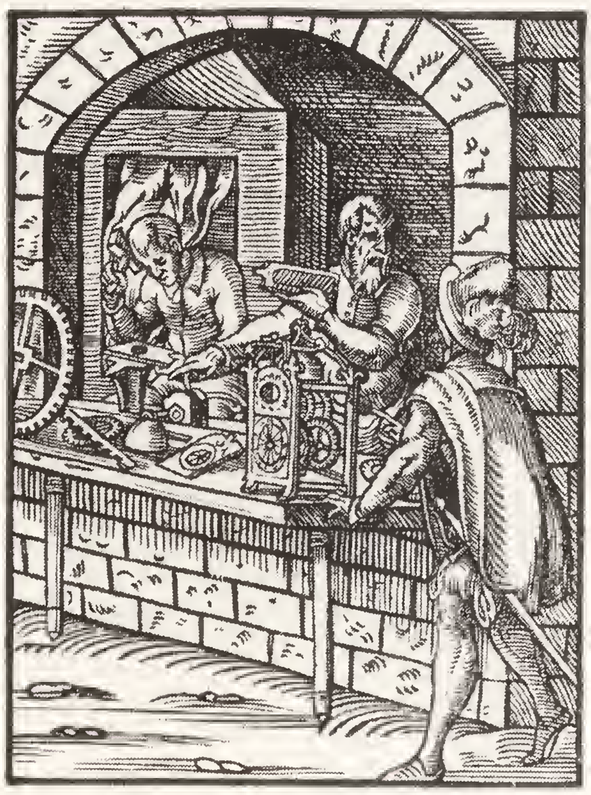
(Tobacco seems to get along with everybody).

The ally usurped normality. It set itself against alcoholic inebriation, called itself sobriety, and began its masquerade.

> *It is the very pervasiveness of the intoxication that makes it*
> *so invisible: it blends completely with the landscape.*
> *It IS the landscape.*
>
> *Every office, large or small, has its shrine, however modest,*
> *to the coffee plant.*

A raising of the center of gravity, like raising the hanging weights of a clock: voice climbs up into the throat. The high center strains the back and shoulders.

> *Pain in the neck.*



JOST AMMAN,
THE CLOCKMAKER, 1568

Straight ahead, *fovea centralis,* the center of the retina. Losing the periphery: maybe "lack of perspective" is the particular distinguishing mark of the stimulants.

The periphery is playfulness, a teasing cunnilingus, or polymorphous perversity. Perspicacity.

Central stimulation is the libido of the mercantile state.

An intoxicated quality: half-dreaming, reverie usurps the controls, drugs the conductor and the engineer, and throws them off the train. The eyes are open, but something is nodding. No "time out." Frenetic. Analysis over contemplation, the universe as a great timetable, a schedule. The periphery, of course, is the medium, the environment.

Too speedy
to have time
to finish a thought.

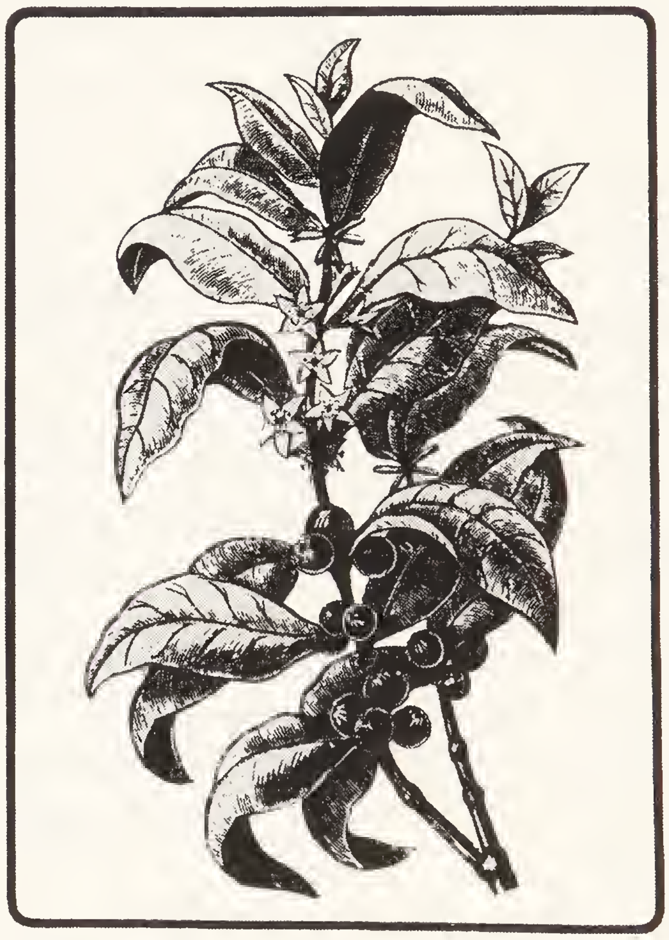
COFFEA ARABICA

Common Names Coffee. Kahvey. Java. Crank. Bean. Joe. Go Juice. Ambition.

Taxonomy The genus *Coffea* is part of the Rubiaceae, one of the largest families of flowering plants. The family is widely represented in the tropics, where it occurs as trees or shrubs. Temperate genera, such as *Galium* (bedstraw, madder) and *Asperula* (woodruff, which is an ingredient in certain liqueurs) are herbaceous.

Alkaloids are common throughout the family. Notable genera are *Cinchona* (quinine), and *Psychotria. Psychotria viridis,* rich in dimethyltryptamine, is a common admixture to ayahuasca.

Only two *Coffea* species are widely cultivated: *Coffea arabica* and *Coffea canephora,* known in the trade as robusta. The best coffee comes from *Coffea arabica,* the original source of the highly prized beans. *Coffea arabica* is the only tetraploid species within the genus, and is apparently a cultigen. Wild populations are very difficult to find, and even those few that are found to be growing without human aid are probably feral. The highlands of southwestern Ethiopia are considered to be the original homeland of *Coffea arabica,* and that is where its greatest genetic diversity is found.



COFFEE PLANT, FROM STRÄSSLE, NATURGESCHICHTE, 1885

While *C. arabica* is nominally tetraploid ($2n=4x=44$), a wide range of polyploids have been found to occur naturally: triploids, pentaploids, hexaploids, and octoploids, as well as haploids. And while the flower is fully capable of cross-fertilization, the tree is so self-compatible that the majority of the fruits are usually self-fertilized. The other wild species of *Coffea* are all diploid and are *generally* self-incompatible, but at least one species is autogamous—perhaps originally a haploid that subsequently doubled.

Since the middle of the nineteenth century, explorers and botanists have discovered scores of truly wild species of *Coffea* in the mountains of tropical Africa and Madagascar. The intrageneric taxonomy of *Coffea,* though well studied, is extremely complex. High variability within some of the wild species, along with wide ranges in the viability of interspecific hybridization (from nearly zero to more than twenty hybrids per one hundred flowers), combine to present the taxonomist with a significant challenge. Botanists traditionally define species based on morphology, but these morphospecies do not always satisfy the requirement of reproductive isolation more often used by zoologists. Several coffee "species," morphologically and ecologically distinct, and clearly separated genetically by geographical barriers, are nonetheless interfertile.

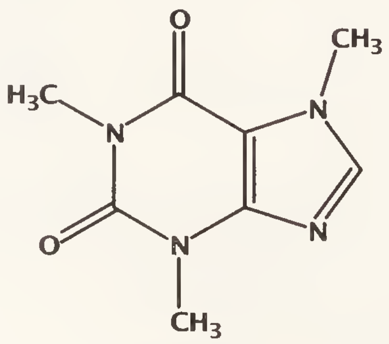
In addition to the traditional morphological-similarity criteria often used to define plant species and genera, the phylogenetic relationships of different wild coffees have been studied more recently with cytogenetic, biochemical, and serological techniques. The results underscore the particular ability of plants to retain ecologically favorable phenotypic adaptations in spite of gene flow.

However, two species living seemingly adjacent to each other may actually be separated by adaptations to particular soil types, narrow ranges of humidity or rainfall, or particular elevations and temperatures, or else by differences in flowering time. Populations of C. *zanguebariae* fall into one of two distinct forms, characterized by leaf thickness (thick, thin), stipule length (long, short), fruit stalk length (very short, long), unripe fruit color (green, brown), and a number of other such morphological features. All except one population. One population contains both types as well as an intermediary form. Although there is no significant geographical isolation of the populations, low viability of experimental hybrids between the two forms reveal a significant genetic barrier.

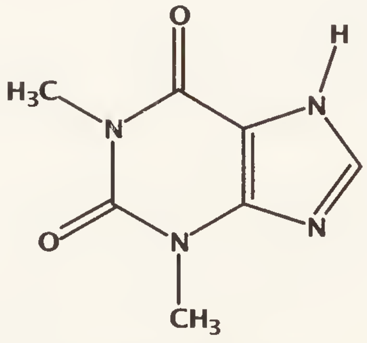
Somewhat the opposite case occurs with the *Coffea* species of Madagascar. The Madagascar coffees have been isolated from Africa since the Cretaceous, and are most distinctive from their African relations by their lack of caffeine. Nonetheless, the Madagascar coffees and a number of the African species can still hybridize.

Part Used The seeds, mostly. In Arabia the pulp is fermented into an alcoholic beverage. In Malaysia and Indonesia, and in some parts of Latin America, the leaves are used to brew a tea.

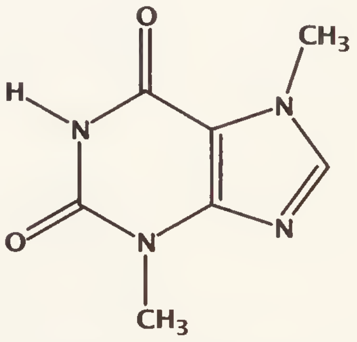
Chemistry The principal alkaloid is caffeine, 1,3,7-trimethylxanthine. Two related xanthines, theobromine (3,7-dimethylxanthine) and theophylline (1,3-dimethylxanthine), are often present in smaller amounts.



CAFFEINE



THEOPHYLLINE



THEOBROMINE

Caffeine occurs in the leaves as well as in the seeds. The caffeine content of green *Coffea arabica* beans varies between 0.6 and 1.6 percent. The caffeine content of the *robusta* form of *Coffea canephora* is higher, usually between 1.2 and 3.2 percent. *Robusta* lacks many of the flavorings found in *arabica,* so is most often used for extracts and instant coffees.

In addition to the alkaloids, the beans contain trigonelline, amino acids, proteins, enzymes, carbohydrates, polysaccharides, quinic and associated chlorogenic acids, oils, a wax that coats the bean, a few pigments, and at least 180 volatile compounds.

Roasting alters the chemistry significantly, of course. Around ten percent of the caffeine vaporizes, even more in a darker roast. Perhaps the greatest effect of roasting is on the carbohydrates, which are highly pyrolized. Roasting also destroys most of the trigonelline, converting it into nicotinic acid (niacin), nicotinamide, and a score of volatile aromatics. Most of the volatile compounds remain trapped within the beans.

Chemists, in partnership with trained coffee-tasters have been able to identify and characterize an astonishingly large number of the flavor constituents of coffee. Like wine tasters, coffee tasters have developed a specialized vocabulary to analyze the complex flavors and feel of a cup of coffee. "Acidity" is distinguished from "sourness," and "bitterness" is distinguished from "astringency" (though molecules that are astringent are sometimes also bitter). Humans have no taste receptor for astringency, but the chemists have been able to correlate astringency with a molecule's ability to precipitate salivary proteins and glycoproteins, and have even developed an objective, *in vitro* model. Results of combined chemical/organoleptic investigation indicate that the astringency in coffee, especially that with a "metallic" aftertaste, seems to correlate with the relative quantities of caffeoylquinic and dicaffeoylquinic acids in the bean.

CAFFEINE CONTENT PER 7 OZ. CUP, MG.

BREWED COFFEE	80–145
INSTANT COFFEE	65–100
DECAF COFFEE	2–4
TEA, IMPORTED	60
TEA, U.S.	40
NO-DOZ TABLET	100, 200
PEPSI COLA, 12 OZ.	38
DR. PEPPER, 12 OZ.	40
COCA COLA, 12 OZ.	46
MOUNTAIN DEW, 12 OZ.	54
JOLT COLA, 12 OZ.	100
COLD MEDICATION	32 (typical single tablet)
EXCEDRIN EXT. STRENGTH	65 (per capsule)

On the chemical side, semi-quantitative analyses have been made on scores of compounds contributing to the coffee aroma. More, many of the breakdown pathways from precursor compounds in the green bean to the compounds found in the roasted bean have also been traced. But because of the sheer number of compounds involved, and synthetic reactions occurring among the breakdown products, the chemists are quick to admit these exercises as yet have little predictive value in determining which green bean will develop what particular flavors.

The character of "body," the mouthfeel of coffee, has proved chemically elusive. It has been demonstrated that there is no simple relationship between body and viscosity. Experiments suggest complex interactions between bitterness receptor sites, astringent phenols (those with at least two 1,2-dihydroxyphenyl residues) that could bind to them, and salivary proteins. At present, "body" is still the venue of the tasters, as is detecting subtle differences between "papery" and "woody," "grassy" and "green," and "earthy," "bricky," and "cereal."

Snore.

No. Wake up now. Have a cup of coffee.

How Taken The oldest method is probably chewing the seeds. In Ethiopia the beans are cooked in butter and made into cakes. In Yemen and other Arab countries the seeds are ground by the woman of the house in the morning by pounding. This sometimes creates problems for people living in apartments. Before the coffee may be drunk the preparation of the coffee must be praised by the eldest male.

Effects To spare spouses and others from being cursed first thing in the morning, which impulse is itself at least partially the result of the coffee you drank yesterday.

The Plant Coffee grows naturally as an understory plant in the tropics as a shrub or small tree. It can grow to a height of more than twelve feet, but is usually pruned in ways that increase its bushiness, leafiness, and ease of harvesting. The white flowers give off a delicate fragrance.

Until recently, nearly all coffee was grown in the shade, in conditions mimicking its natural environment. Growers plant as many as forty different kinds of trees as canopy cover, and a rich ecosystem develops, with epiphytes, mosses, birds, and other wildlife. Today more and more coffee is being grown in cleared "sun plantations." While these sun plantations are better suited to the capital- and fertilizer-intensive methods of agribusiness, they offer no habitat for the hundreds of birds, animals, and innumerable insects found in the traditional farms.

Odd calling a coffee plantation "traditional."

In the cleared plantations, special care has to be taken to protect young plants from the excess of sunlight. Lack of biological insect control necessitates using more pesticides, as lack of humus and plant litter necessitates using more chemical fertilizers. The result is that sun-grown coffee beans are more expensive by the pound to produce than shade-grown coffee, even though the yield per acre is higher. If you can buy shade-grown coffee, do so.

> *The cover trees used in shade plantations often include species of Acacia, Cassia, and Erythrina. And since Salvia divinorum grows well under coffee trees, certain three-level plantation designs come to mind that could be highly viable both ecologically and spiritually, as well as economically.*

How Taken As a beverage, in a cup, extracted with hot water by refluxing ("percolated coffee"), by percolating ("drip coffee"), or by decoction ("campfire coffee").

Drunk in a demitasse, as espresso. With milk, as café au lait or caffe latte. With steamed milk with foam on top, as cappuccino. From a styrofoam cup, at public meetings. From a thermos, directly.

On occasion, squirted through a rubber tube and plastic syringe, as a colonic enema.

History According to legend, we learned about coffee from goats. Around the year 850 in southern Abyssinia, a young goat-herd named Khaldi noticed that his goats were particularly frisky and frolicsome when he brought them home in the evening. Curious, he followed them the next day and observed them eating the leaves and berries of the coffee tree. Possessing that spirit of inquiry so necessary

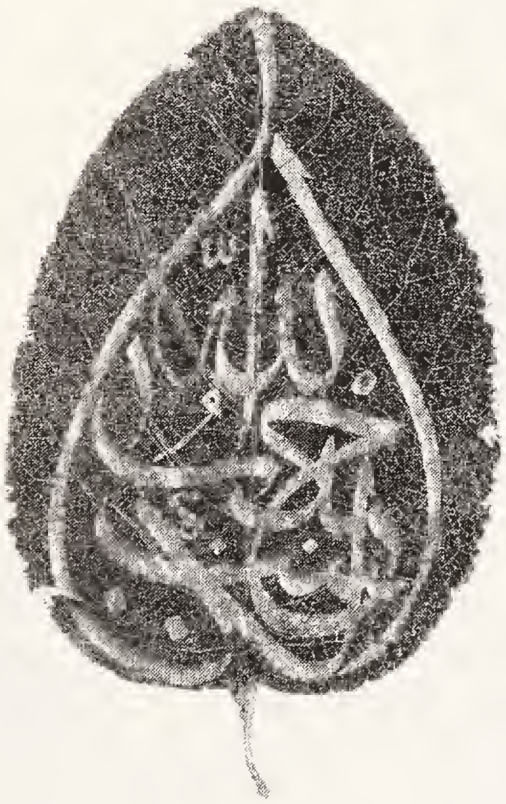
EADWEARD MUYBRIDGE, PHOTOGRAPH, GUATEMALA, 1875 to our ancient craft, the lad tried the fruits himself and was delighted with the result. The prior of a nearby monastery of dervishes followed his example, and found the beans excellent for sustaining the all-night prayers and devotions of his sect. Some say the arts of roasting and brewing coffee were revealed to mankind by the Angel Gabriel.

Avicenna wrote of the medicinal qualities of coffee around the year 900. The first known cultivation of coffee was by the Arabian colony at Harrar, in the thirteenth century. From Harrar, on the banks of the Red Sea, coffee traveled to the center of the world: Mecca. Koranic authorities generally frowned on coffee drinking, but by the fifteenth century coffee drinking had spread around much of the Moslem world. Coffee was introduced to Constantinople in 1453, when the Ottoman Turks, having discovered the secret of Greek Fire, were at last able to conquer the ancient city. The first coffeehouse opened in Constantinople in 1475. There were already coffeehouses in Cairo and in Persia.

When the black spirits pour inside us,
Then the spirit of God and air
And all that is wonderous within
Moves us through the night, never-ending.

—Rumi, 13th Century

Religious opposition to coffee drinking resulted in political proscription a number of times during the sixteenth century. Central to the debate was whether drinking coffee fell under the same Koranic prohibition against intoxication as wine. *Quahweh*, coffee, was also a poetical word for wine. Both sides of the debate had their proponents. The "strict" interpretation was that since the Koran did not specifically mention coffee, it was not forbidden. The nonliteralists maintained that wine was a symbol of inebriation, and that any substance that produced inebriation was included in the meaning. Not surprisingly, many of the strict interpreters were coffee drinkers.



CALLIGRAPHIC LEAF, 19TH CENTURY, TURKEY, GOLD ON TOBACCO LEAF

In 1511 the governor of Mecca prohibited coffee drinking, with severe punishment for any transgressor, and ordered all the stores of beans destroyed. In Egypt, the sultan of Cairo felt differently and countermanded the order. But the issue was not settled. During the next several decades coffeehouses in several cities were destroyed several times, sometimes with punishments visited upon the customers. The issue was finally taken up by a court of Koranic scholars, who declared that since coffee was not specifically mentioned in the Koran, it was not forbidden to the faithful. Von Bibra recounts that after the trial the presiding judge and other members of the court retired to enjoy an evening of coffee drinking.

> *Where coffee is served, there is grace, splendour, friendship, and happiness. You flow through the body as freely as life's blood, refreshing all that you touch.*
>
> *—Sheikh Ansari Djerzeri Hanball Abd-al-Kadir, 16th Century*

The Ally The position of the coffee ally in the letter/spirit debate is extremely important. That this first data point falls with the literalist camp, however, may show more about the coffee ally's power to seduce her devotees into a pragmatic embrace of whichever position is of immediate aid to their goddess than to her intrinsic spiritual properties. Or perhaps those *are* her intrinsic spiritual properties.

> *But of course what is good for coffee is good for all,*
> *the matter of "enlightened self-interest."*

History Descriptions of coffee drinking began to appear in Europe and England through reports of travelers. One of the first descriptions was written by Rauwolf of Augsburg, who later gave his name to *Serpentaria rauwolfia,* the source of the tranquilizer reserpine. The first coffeehouse in the West opened in Venice in 1560; from there, coffee spread north over the next century.

Through all of this time the Arabs kept a complete monopoly on coffee beans. Foreigners were not allowed access to the Red Sea plantations, and no viable seeds were allowed to leave the country. But around 1600 an Indian pilgrim was able to smuggle seven beans back to Mysore by strapping them on his belly, a technique still in use at various border crossings as other plant products have fallen under customary scrutiny.

In 1690 a group of Dutch mariners managed to steal several live coffee plants and smuggle them out of the Arab port of Mocha. They planted some of the saplings in Java, a Dutch colony already supplying Europe with pepper, nutmeg, and other spices. At least one coffee plant was sent to the botanical garden in Amsterdam. A shoot of this plant was presented as a gift to King Louis XIV of France in 1713.

Ten years later an enterprising French officer, Gabriel-Mathieu de Clieu, the Captain of Infantry in Martinique, broke into the Jardin Royale and stole the plant. In this he was assisted by a lady of the court whom he had broken into in another manner, and who felt kindly towards him. De Clieu immediately set sail with his plant for the West Indies. The voyage ran into bad weather, ran low on provisions, and de Clieu was forced to share his own scanty water ration with his plant to keep it alive. When the ship landed in Martinique, de Clieu planted his treasure and protected it with guards and thorn bushes. The plant survived, and most of the coffee trees alive in the Western Hemisphere today are its descendants.

Brazil's immense coffee industry got its start from one of the de Clieu's trees that had been transplanted in Guiana. In some measure of poetic justice, the Brazilians also obtained the tree through love. When France and Holland were having a dispute over the border between their colonies in Guiana, Brazil, in an act of friendship, sent an official envoy to help mediate the conflict. During the deliberations, Lieutenant Colonel Francisco de Melo Palheta stayed in Guiana with the French Governor and his wife. When he left, the governor's wife, as an appreciative token of parting, gave him a bouquet of flowers. Hidden within the bouquet was a live cutting from a coffee tree. All of the coffee trees in Brazil are descended from that loving branch.

Effects A tendency to philosophize.

Signatures The herbalists recognized the humoural properties of coffee as cold and dry: melancholic. Since women are wetter, and men drier, by theory coffee was more suitable to women than to men, unless the woman was melancholic in disposition. In men, coffee was best for those of sanguinary temperament. Likewise, coffee was regarded as most medicinal for diseases that were warm in nature, or warm and wet.

To a Lady
... A Word About Coff

TO A LADY: A WORD ABOUT COFFEE (MAXWELL HOUSE AD, 1933)

History Coffee began appearing in Europe in the early seventeenth century. Its entrance, tentative at first, as an expensive and exotic curiosity, quickly became an excited and exponentially growing rush. The first coffeehouse is credited to "Jacob the Jew," at Oxford in 1650. In London, a man named Edwards had brought back coffee beans from his travels in the Levant, along with a Greek slave girl named Pasqua. Pasqua knew how to roast and brew the beans, and Mr. Edwards often had his servant serve coffee to himself and his frequent guests. When Pasqua and Mr. Edward's coachman fell in love and wanted to marry, Edwards, evidently free of morbid possessiveness, gave his consent and was fond enough of the girl to give her his coffee beans and to set her up in business as a wedding gift. Pasqua's coffeehouse opened in 1652 and was a rousing success. Within ten years there were three hundred coffeehouses in London. In 1660, perhaps not coincidentally, the monarchy was reestablished.

COFFEE BEANS

Coffee, the Restorative . . .

Two civil wars, a regicide, and a revolutionary reformation had all been accomplished without coffee. Groups like the Levellers, the Ranters, the Diggers, the Muggletonians, and the Family of Love explored fresh theological revelations, free love, communal living, protection of the commons, redistribution of land and what some called a "New Age." We should remember, in dark days, that sometimes "the people" prevail and popular and radical uprisings can succeed, if briefly.

The Commonwealth lasted barely lasted a decade—institutions can have their own intrinsic dynamics regardless of who runs them. The first losers were the radical groups such as the Diggers, who were being persecuted by the second year of the Commonwealth. The established magisterial churches allied themselves with the Royalists to put down the antinomian threat from the new religions, mostly made up of artisans and small shopkeepers, and the occasional poet (Milton was at the least a fellow traveler). The political and religious ideals of the English Civil War survived the Restoration underground, in spite of sometimes severe persecution. Blake was a Milton man and perhaps a Muggletonian. In some ways the English Civil War was an inspiration for the American Revolution a century later. And the post-Revolutionary religious revival in upstate New York—the "burned-over district"–inherited much of the spirit of the English New Age two hundred years before. Mormons drink no coffee.

Marxist analysis would say that the English tried to skip a grade, tried to violate the laws of historical dialectics—that the true revolutionary class in mid-seventeenth century England was not the Levellers but the bourgeoisie. (This is the same argument the Communists gave for shooting the Anarchists in the back in Barcelona.) Coffee was ready to meet the challenge—it seemed particularly to attract the entrepreneurial mind. When Charles II tried to close the coffeehouses in 1675, it was more to quiet opposition to his economic, rather than his religious policies. The King was forced to rescind his Proclamation when opposition by coffee drinkers threatened to topple the monarchy.

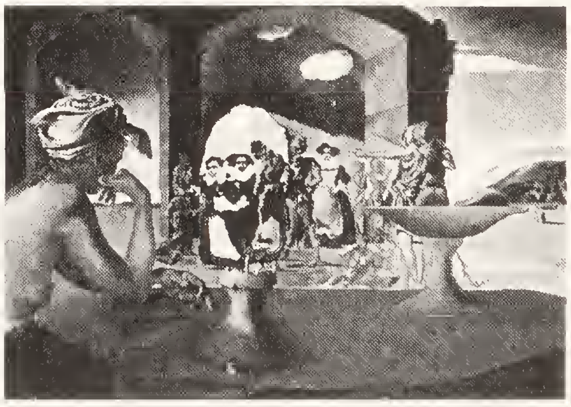
Coffee styled itself the "sober beverage." It was an anti-inebriant, believed then (as still today), to be able to sober up those drunk on spirits. By extension then, to one not inebriated, coffee could make the drinker somehow "more sober" than ordinary sobriety.

Before coffee, hot beverages were almost unknown in Europe. Herbal infusions were drunk for medicinal purposes, if at all. Such plant lore resided in the countryside, and herbalism and the women who preserved the tradition were under increasing attack from urban, university-centered, male medical practitioners. Spiced cider and the alcoholic posset were served hot, but the staple beverage everywhere was beer, beginning with breakfast. In most places, one couldn't drink the water.

Coffee was the new way: it resonated with images of distant places and foreign cultures; it was the spirit of the Enlightenment and supported the Enlightenment and was supported by it in turn.

Signatures, Voltaire

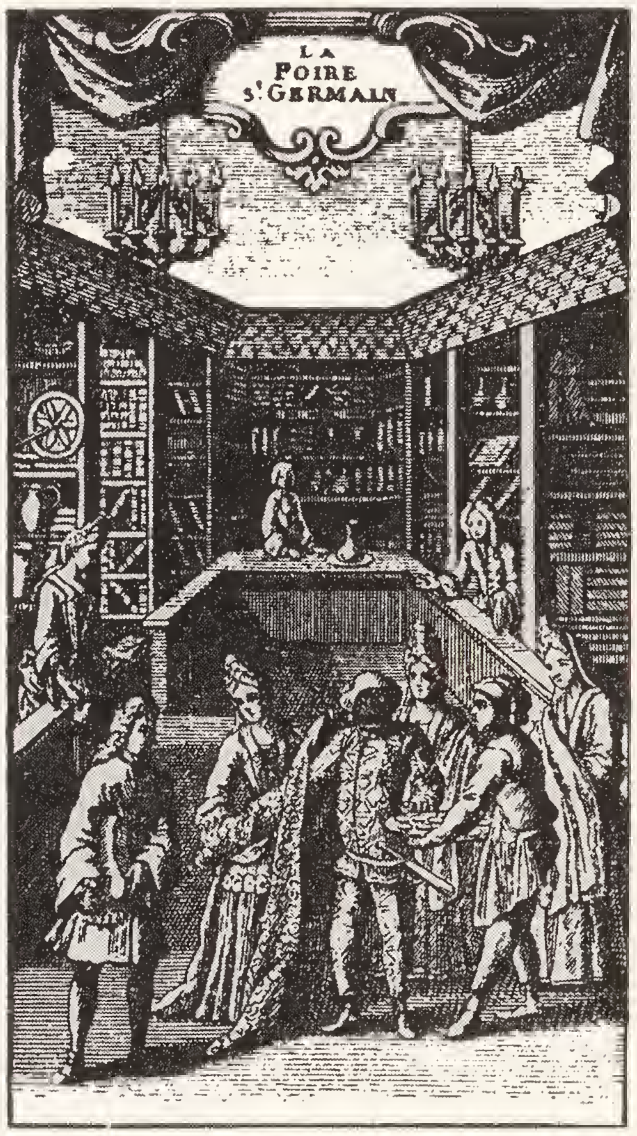
The quintessential coffee-shaman was Voltaire. He was born into a world where kings were believed to enjoy a special affirmation from God, and in which feudal and hierarchical theology was so entrenched that atheism was unthinkable to a serious mind. When he left the world all of those supposed "truths" were in doubt.



VOLTAIRE, BY DALI

As a young man Voltaire studied with the Jesuits. During his studies Voltaire received a remarkable bequest, a sum of money "for buying books," from an even more remarkable woman, Ninon de Lenclos.

Ninon de Lenclos was a notorious courtesan whose salon had attracted Moliere and other leading French intellectuals. Her sexual expertise was so legendary that aristocratic women would send their daughters to her as a finish to finishing school. When Ninon de Lenclos was once confined to a monastery because of her irreligious views—by her own diary she seduced 439 of the monks before Louis XIV decided it was safer to have her on the street. She was highly intelligent, extremely well-read, and a thorough free spirit who didn't believe in hiding her light under a barrel. She saw what she hoped was the same spirit in young Voltaire, and she was right.



COFFEE STALL, LEHNER

Voltaire did buy books, and he followed the light of his patron to find freedom of thought. He was imprisoned in the Bastille for one of his satires, and later spent three years in exile in England. While in England, he did a very un-French thing, he read the English.

Voltaire had already read Descartes and Spinoza. He brought together Descartes's concept of a reasoning free entity, mixed it with the pantheistic theology of Spinoza, and then synthesized these ideas with the mechanical physics of Newton and the toleration, and consequent mistrust of dogmatism, he found in Locke. Voltaire added a garden, and the Enlightenment leapt through time.

Voltaire was evidently a fairly disagreeable man. Rousseau certainly found him so, and Rousseau himself was no personable companion. (When Rousseau, as a young man, had sent the elder philosopher a copy of his *Discourse on Inequality,* Voltaire had answered him, "One longs, on reading your book, to walk on all fours." Rousseau, for his part, as a mature philosopher wrote to Voltaire and after complimenting Voltaire for his genius and expressing his love for his writings, told him that nonetheless he hated him personally.) Both Voltaire and Rousseau frequented the Café Procope in Paris, as did Diderot and another coffee-lover, Benjamin Franklin.

As more and more accounts of shamanism began appearing in the reports of travelers and explorers, Voltaire, like most Enlightenment thinkers, dismissed the phenomenon as mere trickery foisted upon simple-minded people by posturing charlatans. Voltaire saw nothing in the nature of inspiration that might require any transcendence of reason, and the reported use of mind-altering plants by shamans only proved the irrationality of the whole endeavor.

> *Mock on, Mock on . . .*

Voltaire drank seventy-two cups of coffee a day. He used his lover's back as a writing desk.

History By 1700 there were 3000 coffeehouses in London. The coffeehouse provided an entirely different atmosphere from the tavern or pub. Gentlemanly rules of behavior were posted. Coffeehouses were democratic enclaves, where noblemen got no special seats. They were places to discuss ideas, new ideas to match the novelty of the beverage. The coffeehouse was also the place to discuss political ideas, one of the causes of their episodic suppression everywhere from Constantinople to London. The coffeehouse was also a male preserve, and a place to discuss business. One of the first London coffeehouses was Lloyds, the beginning of Lloyds of London. Another coffeehouse grew to become the English stock exchange. Others evolved into trading companies, brokerages, and some of England's largest banks. The rest became the English clubs.

The Ally Though early researchers noted coffee's tendency to loquacity, the ally has a remarkable ability to disguise its intoxication as ordinary, as the ground state. Coffee was characterized as businesslike rather than frivolous, as reasonable rather than impulsive.

> *Except that I'm slowing down. Give me some more coffee. Else I might have to reconsider.*

History It is difficult to separate the history of coffee from that of tea and cocoa and the spice trade—the stories twine together. The major coffee traders were the several East India Companies, principally those of the English and the Dutch. The French, the Danes, the Swedes, the Scots, and the Austrians all had East India companies at various times during the mercantile era, but their power never matched that of the Dutch and English. The role of the East India companies in European and American history in the seventeenth and eighteenth centuries is pivotal and central to the Industrial Age that followed.

At the end of the sixteenth century the Portuguese controlled the world spice trade, having wrested it by finesse and force of arms from the Venetians, who had controlled it for the preceding four centuries. But in 1594 the Portugese overplayed their hand by closing Lisbon to the Dutch and English. The Dutch responded by forming the Dutch East India Company, aiming to open trade directly with the East Indies. They sent four vessels to India, established trading posts, returned with loads of pepper, cloves, nutmeg, and other spices, and soon had a controlling share of the market. In 1599 they doubled the price of pepper. This move, in turn, prompted the English to form their own East India Company to compete with the Dutch.

We'll tell more of this story in the chapter on nutmeg, but, in brief, in numerous frontier wars and acts of piracy, the Dutch East India Company (and the English, when they could) took over many of the Portuguese "possessions," conquests made easier in part because the heavy-handed Portuguese treatment of the natives had predisposed them to ally themselves with any Portuguese enemy. "Cutthroat capitalism" took on a literal meaning when the Dutch monopolized trade with Japan, Siam, and the Spice Islands by capturing and torturing to death ten rival English traders, along with one hundred of their employees and families. State support of these trading companies was so strong that the charter of the Dutch United East India Company, in addition to assuring them a twenty-one year monopoly, gave the company the right to build forts, maintain armies, make treaties, wage wars, and coin money. The British East India Company had a similar charter. Rival ships and entire colonies were taken by force of cannon. Trade laws and tariffs were enacted to support and protect the Company. It was such trade laws, specifically enacted to build the profits of the British East India Company, that led to the American Revolution more than a hundred years later.

That great Conservative, Malthus, was an East India man. He joined the East India Company with a charter to maximize profits when he gave up the ministry. Malthus later went to Parliament and was instrumental in enacting the Poor Laws: laws that cut the traditional charities given to the poor and infirm and instead forced them to enter exceedingly oppressive "workhouses." But that is a story of tea. And there is another story. Coffee, tea, and chocolate created a huge demand for sugar. Growing sugar created a demand for slaves. A large demand, as we shall see.

The Ally The coffee ally and her shrine, the coffeehouse, radically altered English prose style. Writers such as Henry Fielding, Jonathan Swift, Daniel Defoe, and Laurence Sterne, their ears tuned to the speech of the coffeehouses they all frequented, began writing dialog that differed markedly from the stiltedness that had characterized even the popular pre-coffee writers like Thomas Nashe. They began writing in the rhythms and speech of spoken English: the conversational English of the coffeehouse. It was, after all, respectable.

In poetry, coffee went to satire. Pope was a coffee man.

Effects A tendency to repartee and wit.

History During the eighteenth century women broke the male monopoly on coffee drinking. There had been a radical element to the coffeehouse, an egalitarianism—often written explicitly in the house rules. No tradesman was expected to stand and give up his chair to a gentlemen: all were to sit together, wherever there was an empty chair. Parlour coffee drinking, pioneered by the women, aligned itself more with the gentility.

Since drinking coffee socially was something that gentility and the aristocracy did, the middle classes could prove their own respectability and gentility by doing the same. Women's coffee circles, held in private homes, not in public places, became common in England in the early 1700s. There were male jokes about the gossipy subjects the women conversed about compared to the serious business and political talk of the coffeehouse. But by bringing coffee into the home, the way was open to its complete domestication, which was well established by the mid-eighteenth century. Coffee became a breakfast drink and an afternoon drink. Families drank it together and the idea of family life and family harmony—respectable and genteel and all sitting together—crystallized around the central ritual. The English gradually changed to tea—more about that later—but the ritual was the same. Coffee at home also became a norm in France and the Netherlands.

> *Coffee, Coffee musse ich haben: und wenn jemand*
> *mich will laben, ach so schenkt mir Coffee ein!*
>
> *Coffee, I must have coffee. Anyone who*
> *would refresh me, must pour me out some coffee.*
>
> —*Picander/J.S. Bach, 1735, "Coffee Cantata"*

In Germany coffee had a more difficult conquest. The German countryside was so demolished and wasted from the Thirty Years War that Germans little participated in the coffeehouse culture. It wasn't until late in the eighteenth century that a fastidious coffee drinker, Immanuel Kant, brought German Enlightenment thought to its culmination.

For the most part, Germany skipped coffeehouses and moved directly to the domestic stage, about half a century after the more western countries. One problem for German coffee drinking was Germany's lack of colonies: coffee created a trade deficit. Also, coffee was recognized as a competitor to beer, and thus un-German. The combination of economic and political problems in Germany resulted in prohibitions against coffee that were the most severe of any in Europe. Frederick the Great prohibited commoners from drinking coffee, reserving it for the nobility. Special police called "coffee-sniffers" were sent through the cities and towns to find and arrest any of the illegal drug users.

> *kinda like airports . . .*

None of the prohibitions was entirely successful.

Coffee remained a specialty item in Germany until the twentieth century. Drunk, and appreciated, but often difficult to acquire. Many Germans drank chicory.

Chicory "coffee" was championed as a patriotic drink—it could be home-grown and did not contribute to the trade deficit. But even chicory coffee was often adulterated by cheaper ingredients, and old herbals and pharmacopoeias describe techniques for detecting such adulterants. Brick dust or red ochre was the most common adulterant, often added right at the factory along with one or more of a dozen different substances, such as tanoak bark, bread crumbs, used coffee grounds, roasted acorns, or roasted peas. Real coffee was called "bean coffee."

The Ally

At a famous coffeehouse in Paris, the Café Foy, a journalist named Camille Desmoulins who had drunk a great deal of coffee climbed onto a table and delivered a passionate and articulate speech on freedom and the evils of monarchy. A large crowd gathered. The words were repeated and the speech was paraphrased. It was July, 1789. Two days later the Bastille fell.

Pharmacology

Many of the physiological effects of coffee are due to its principal alkaloid, caffeine. The effects of caffeine are today well characterized, though not well understood in terms of cellular mechanisms in spite of highly refined studies. Researchers have also investigated the activity of the nonxanthine components of coffee. One early researcher, named Lehmann, after separating out the various components of the beverage and testing them, claimed that the roasted oils slowed the metabolism and that they seemed to excite the intellect rather than the imagination. Modern research has confirmed these early studies in some ways, as, for example, a recent study that found nonalkaloidal compounds in coffee (feruloylquinic lactone isomers) that act as opiate antagonists. These compounds are most prevalent in instant coffees.

But studies on coffee have often produced conflicting results. It is extremely difficult to separate out the effects of coffee from other dietary and lifestyle factors that may be associated with coffee drinking, such as that people under stress may drink more coffee than "norms." Thus studies linking caffeine intake with stress or depression are open to criticism if other lifestyle factors are not adjusted for. New discoveries about the effects of coffee or one of its constituents are being made regularly. Of all the constituents of coffee, caffeine is the best studied. The complex of chlorogenic acids is known to interact with caffeine, speeding its absorption and delaying its elimination. Recent studies are uncovering the role of the diterpenes in coffee, such as kahweol. See further discussion under "Health."

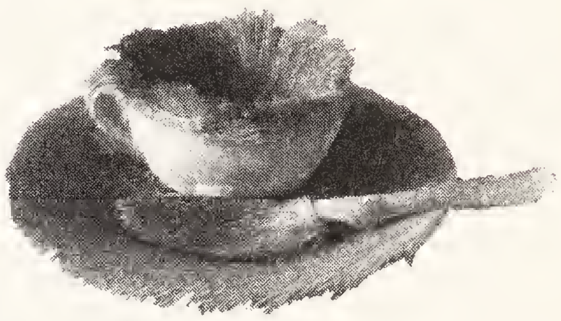
Caffeine is a central nervous system stimulant, a cardiac stimulant, a respiratory stimulant, and a diuretic. Caffeine is addictive. Withdrawal symptoms typically include irritability, fatigue, and headaches, sometimes severe.

Caffeine tends to relax the smooth muscles, including the gastrointestinal tract, but it is probably the chlorogenic compounds, known to increase intestinal motility, that are responsible for the loose bowels and diarrhea often associated with coffee. Stimulation of the gall bladder is caused by nonxanthine components. Coffee stimulates acid and pepsin secretion, and decaffeinated coffee is only slightly less effective.

Caffeine relaxes bronchial muscles, thus is an aid to asthma sufferers, though theophylline and theobromine are more potent. Much of the ability of the xanthines to abate asthma may be due to stimulation of the medullary response to carbon dioxide. As a vasodilator, caffeine also increases pulmonary flow.

Caffeine causes a slight increase in metabolic rate. Like the other xanthines, it stimulates the heart. Large amounts of coffee can produce tachycardia and arrhythmias. Cardiac stimulation from coffee is virtually absent in regular users, due to tolerance.

While caffeine is generally a vasodilator, it has the opposite effect in the kidneys and in the brain, actually decreasing blood flow to the brain. It is the increase in cerebrovascular resistance that makes it effective against migraines caused by cerebrovascular distention.



The stimulating effects of caffeine on the body seem to be greatest in those already fatigued. Caffeine is less effective, sometimes even deleterious, in those already operating at a high level. Everyone agrees that caffeine delays the onset of exhaustion. Cyclists showed significant gains in endurance after ingesting caffeine, and caffeine levels in cyclists are now limited by rules to a moderate threshold. When track and field athletes were tested in double-blind experiments, researchers found that between 54 and 83 percent of the athletes given regular coffee improved their performance in such events as shot put, long jump, and sprints, whereas three-quarters of those given decaffeinated coffee showed a decrease in performance.

Fine motor skills are not improved by caffeine. Caffeine increases hand tremor. But tests of skilled racing drivers showed no drop in performance.

Most agree that caffeine increases alertness. Though a characterization of "prolonging vigilance" might better explain some of the conflicting results in tests of arithmetic performance and reaction time. "Prolonging vigilance" means that caffeine will delay deterioration in reaction time and task performance that would result from physical or mental exhaustion. Or boredom. Caffeine helps rodents to learn, but human studies are equivocal. One researcher said: "increase in intellectual speed but not in power."

a shift toward the fast side,
high frequencies, low amplitude, EEGs
with alpha dominance, theta diminution,

a point to be considered
for certain divinatory practices.

Everyone reports sleep disturbance caused by caffeine. Onset of sleep is delayed. During sleep there is more restlessness, more tossing and turning, and the duration is shorter. Unlike alcohol, caffeine affects deep sleep. REM sleep is little effected.

Individual differences in caffeine's effect on sleep appear to be far less than subjectively perceived, when factors such as dosage, food intake, and situation are controlled. In one study those given placebos and those given decaf coffee equally reported lack of sleep disturbance, while caffeinated coffee disturbed the sleep of both habitual coffee drinkers and abstainers.

Some studies have brought out differences in reactions to coffee among different personality types. One theory is predicated on the idea that cortical arousal is a determinate of behavior, that cortical arousal improves behavioral performance up to an optimum level and beyond that deteriorates such performance. Thus extroverts, characterized by suboptimum arousal levels, experience more positive mood and behavioral effects from coffee than introverts, who are in a chronic state of overarousal. A. Liguori (1999) and his colleagues found no such differences in the effects of coffee between introverts and extroverts. Whatever introverts and extroverts are supposed to be.

Tests of caffeine on "normal" and "hyperactive" children found no statistically significant differences in effects.

The Ally

Coffee's suppressive effect on the theta rhythms may relate to its effect on deeper meditative states.

> *A subtle strengthening of the "monkey mind."*

Coffee drinking is permitted in some Western zendos, not in others—that "bracing" not become "racing."

Effects

Impulsivity. Sociability. A sense of well-being. Or nervousness. Jitters.

Euphoria, especially among nonhabituated users.

> *I hadn't had any coffee for two months and I visited these guys and they made me a cup. I thought for awhile I'd been dosed.*

Pharmacology

Caffeine causes an increase in catecholamines and renin circulating in the blood. In the brain caffeine seems to reduce pre-firing release of serotonin (5-HT) into the synaptic cleft. Increases in both synthesis and turnover of norepinephrine (NE) occur. Increases in blood and urinary levels of NE and epinephrine may come from secrections of both the adrenals and sympathetic nerves. This increase in not observed in habituated users.

Caffeine affects dopaminergic (DA) systems in the brain. The action is biphasic: there is an initial increase in DA levels followed by a drop off. The mechanism is unclear.

Nicotine interacts with caffeine by increasing the rate of its metabolism in the liver, and thus moderating its effects. Again, tolerance to the drugs moderates the moderation.

Caffeine's Galenic characterization as being "cold" is correlated neurochemically in that by inhibiting certain brain neurons that affect the release of temperature-controlling pituitary hormones, in the hypothalamus, caffeine mimics the effects of warmth. The body, through the pituitary gland, responds by lowering body temperature. It is interesting that amphetamines act differently: like caffeine they add cooling to coolness, but unlike caffeine they respond to warmth with more warming.

Effects on hormonal glands within the brain seem dosage dependent and somewhat nonlinear: small doses have no effect while large doses create effects resembling stress. Neuroendocrine effects can be measured in human beings at doses of 500 mg. caffeine, but begin to fade into the ambient hormonal background noise at 250 mg.

A picture begins to emerge: of multiple actions, multiple receptors, direct actions on muscles, complex actions on neurotransmission. When taken together with behavioral variables and neurochemical regulation mechanisms, a metastable and somewhat chaotic system emerges. Small differences in the initial state can cause large differences in caffeine's effects. State variables include tolerance, fatigue, metabolic rate, enzymatic balances, ingrained mental habits (with associated neurochemical responses), existing level of cortical arousal, and of course the combining effects of other drugs, including food.

Much current research is centering on caffeine's action as an adenosine antagonist. Adenosine is found in nearly every synapse in the body. Concentrations of adenosine receptors in the brain are quite variable, with high concentrations found in certain areas such as the molecular layer of the cerebellum and the hippocampus, and correspondingly low concentrations in other areas, such as the hypothalamus and the cerebellum white matter. Therefore any antagonism of adenosine by caffeine could create scores of gradients between the dozens of specialized areas in the brain, with consequently complex results. Chronic ingestion of caffeine by rats results in an increase in brain adenosine receptor density.

Adenosine inhibits blood clotting, and inhibits the breakdown of fats. Such opposite actions for caffeine have not been noted, but that doesn't completely rule out the possibility. In the brain, adenosine seems to inhibit the release of neurotransmitters, whether they are excitatory or inhibitory. Adenosine acts as a presynaptic inhibitor of the release of acetylcholine, noradrenaline, and g-aminobutyric acid (GABA). This non-specific antagonism could explain many of caffeine's complex and sometimes contradictory actions, such as its biphasic action on motor stimulation. At low doses caffeine decreases locomotor activity, while at higher doses such activity is enhanced.

Complicating the picture, at least two different adenosine receptors occur on central neurons. Caffeine appears to bind to one of these much more strongly than to the other, and the two receptors seem to have different, and in some cases opposite, physiological effects. Various substituted xanthines bind preferentially either to adenosine A_1 or adenosine A_2. Theophylline and theobromine each have their own binding profiles, distinct from each other and distinct from caffeine.

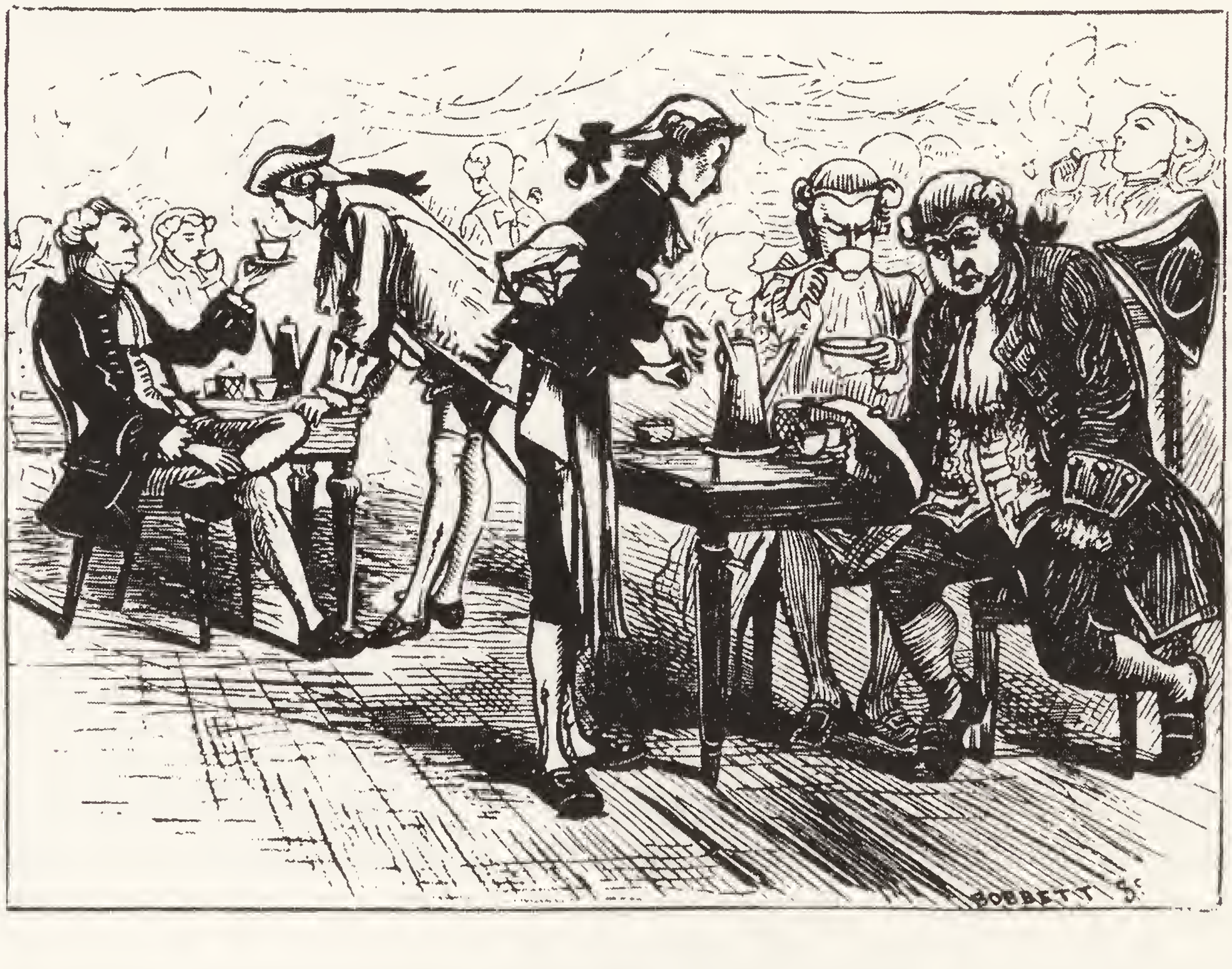
But even adenosine antagonism cannot explain all of the observed effects of caffeine, much less those of coffee. The systems are too complex to be able to characterize the sum of coffee's effects in an operational mode. Disciplined and sensitized phenomenological investigation is, for us, more immediately useful.

The Plant

Someone once offered a cup of coffee to Richard Evans Schultes. He sniffed and answered tersely, "Oh no, that's Brazilian coffee. I only drink Colombian coffee."

How Taken

Around the world, hot or iced, in a wide variety of roasts: light American, medium Vienna, dark French. Brewed with every consistency from a thick muddy soup to a thin tea-like liquid. Combined in any proportion with milk, condensed milk, cream, butter, goat's curd, and eggs. Flavored with various combinations of sugar, lemon, cardamom, cinnamon, allspice, cloves, cocoa, nutmeg, fennel, tamarind, vanilla, hazelnuts, ginger, and saffron.



ALFRED BOBBETT, COFFEE HOUSE IN COLONIAL AMERICA

CORRESPONDENCES

ACTIVITY	Commerce
ANIMAL	Camel
ARCHETYPE	Soldier
ART FORM	Fiction
BODILY FUNCTION	Locomotion
BODY PART	Heart
BUDDHA REALM	Karma
CHORD	Tonic
COLOR	Ivory
COSMIC ENTITY	Main Sequence/Blue-White
CRUTCH FOR	Inattention
DIMENSION	Time
DISCIPLINE	Taxonomy
ELEMENT	Metal
FORM OF ENERGY	Chemical
FORM OF IGNORANCE	Speculation
GEMSTONE	Amethyst
GEOMETRY	Analytic
GOD	Hermes
GODDESS	Fortuna
GRAMMAR	Context Free
HISTORICAL AGE	Kali-Yuga
HUMOUR	Melancholic
IMAGE	Clock
LANDSCAPE	Cities
LOGICAL OPERATOR	Xor

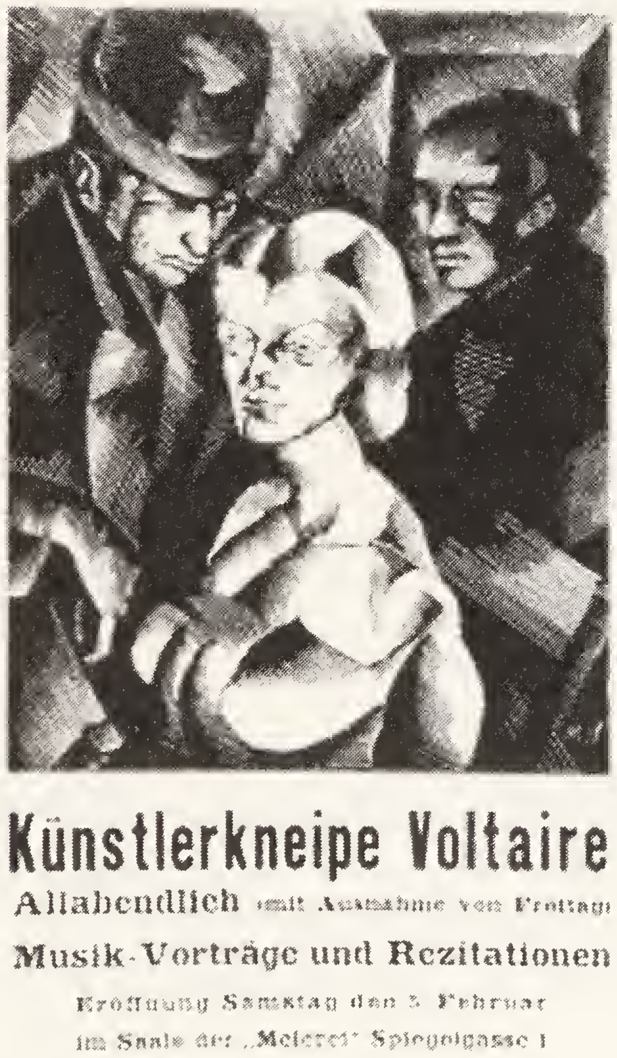
History, 19th Century

The nineteenth century witnessed the consolidation of the class interests of the new bourgeoisie—the global emergence of industrial capitalism and colonialism that has perhaps reached its apotheosis in our own time. Coffee tells the story in a succinct way, an en-cup-sulation, as it were. We will consider the case of Guatemala. But for appropriate context we must briefly return to Rousseau, and the progress of the Enlightenment.

At least since classical times (I'm thinking of Herodotus), civilized man has contrasted himself with the uncivilized, the primitive savages who live in the forests and jungles. Civilized man and primitive man form a dialectic by which the civilized man defines himself. (The converse, however, is not true.) Civilization considers the primitive man to be "wild," the wild man: hence the connotations of the word savage, which means "forest dweller." Any particular civilization's image of the primitive is largely a projection of its own separation from nature, its shadow. The primitive is civilization's representation of the natural man, of raw human nature.

Informed by three centuries of discovery, Rousseau studied primitive cultures in hopes of discovering the nature of the disease called civilization. In Rousseau's century the future course of civilization was not yet cast in concrete—alienation had not reached the point that a thinking man could not believe that he had a role in forming the future course of his society. Rousseau was too cognizant of the shallowness and growing acquisitiveness of his own times to trust the Deist idea that more reason and more learning would by themselves lead to greater moral perfection.

Like Augustine, Rousseau recognized the human capacity for evil. Unlike Augustine, he did not believe in original sin. For Rousseau, the source of Good was not God but nature. And it was in the primitive that he sought to find nature: the original human nature that had not been warped by hierarchies of power, neurotic acquisitiveness, and separation from natural rhythms—human beings who still listened to nature as an inner voice. He liked what he heard.


Künstlerkneipe Voltaire
Allabendlich (mit Ausnahme von Freitag)
Musik-Vorträge und Rezitationen
Eröffnung Samstag den 5. Februar
im Saale der „Meierei" Spiegelgasse 1

MARCEL SLODKI, POSTER FOR OPENING OF CAFE VOLTAIRE, ZURICH, BIRTHPLACE OF DADA

In spite of Voltaire's quips, Rousseau never used the term "Noble Savage," nor did he ever advocate a return to an older, precivilized life style. Rousseau looked to the primitive to recover what has been lost, for the natural wisdom that had guided human culture for countless millennia and from which all civilization had emerged. Rousseau noted that the Savage looked within himself for his identity, while civilized man looked without, to objects and the opinions of others. He noted that in primitive societies everyone was a participant, psychologically and spiritually as well as economically—that there were no disenfranchised classes, that though there were natural differences between men, these were not institutionalized. In short, Rousseau found in the "primitive" much to be admired, and a source of hope for the future course of civilization, even though his own contact with "nature" was mostly his mistress.

After dinner we regained the shade, and while I was picking up bits of dried sticks, to boil our coffee, Madam de Warrens amused herself with herbalizing among the bushes, and with the flowers I had gathered for her in my way. She made me remark in their construction a thousand natural beauties, which greatly amused me, and which ought to have given me a taste for botany.

—*Rousseau, Confessions*

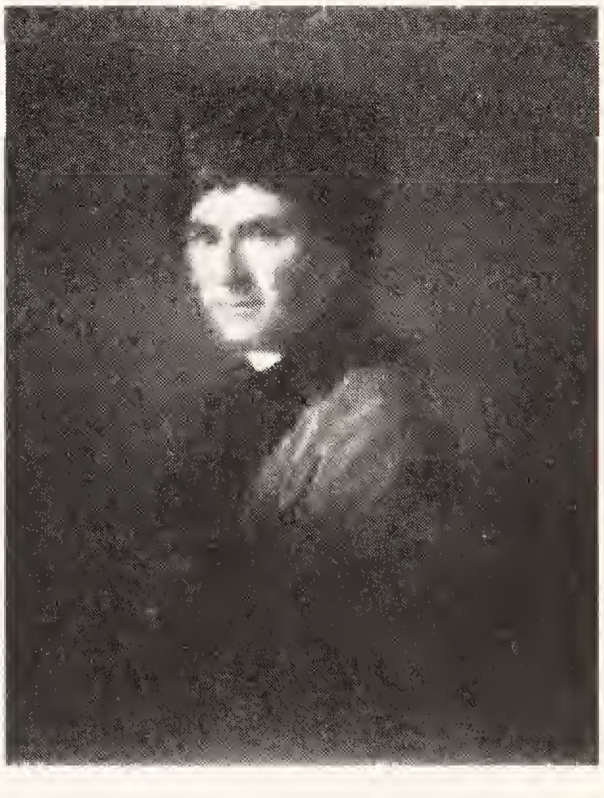
The other major current of the Enlightenment, represented by Voltaire and Diderot and the Encyclopedists, while recognizing the inequities and suffering in their own society, focused on science and reason to discover and implement rational solutions. But this was a matter of emphasis. In spite of Voltaire's sarcasm and Rousseau's paranoia, the two philosophers could have met for coffee, discussed their hopes for the future of the world and found themselves mostly in accord. But by the nineteenth century the two currents had grown further apart.

Eighteenth-century science, still holistic, hardened into nineteenth-century determinism. "Progress," in practice meaning European-style (mainly Anglo-Saxon) capitalism, was seen as a historical and evolutionary inevitability, and thus became the intellectual rationale for the economic and political exploitation of the indigenous peoples on the frontiers. Nineteenth-century genocide never reached the scale that it has in our own century, but we can search there for clues to the etiology of that frightening yet salient characteristic of our modernity.

The Ally A tendency to rationality and the abstract, to be swept away by the grandeur of an idea. A tendency to linearity.

A tendency to verbosity.

Health An interesting recent study (Ross 2000) found a clear linear correlation between coffee and caffeine intake and reduced risk of Parkinson's disease. The correlation was independent of milk, sugar, or niacin intake and held true for both smokers and nonsmokers. As Parkinson's disease causes shaking and coffee causes shaking, this finding should not be surprising to those familiar with the principles of homeopathy—curing like with like.



ALLAN RAMSAY, ROUSSEAU IN ARMENIAN DRESS, 1766

Two diterpenes in coffee, cafestol and kahweol, have been linked to sharply elevated levels of homocysteine in humans. Since there are indications that high plasma homocysteine levels are a more significant risk factor for cardiovascular disease than cholesterol (cafestol and kahweol also raise cholesterol levels), the finding is of interest to coffee drinkers. The original study (Nygard 1997) was made in Norway, where health workers had noticed a correlation between coffee consumption and heart attacks. The good news is that further studies, while confirming the role of homocysteine in hardening of the arteries, found that Norwegians usually brew their coffee by boiling, which maximized the release of the diterpenes. Drip-brewed coffee, through a filter, contains only negligible amounts of the diterpenes. Espresso coffee contains intermediate amounts of cafestol and kahweol (Gross

1997, Grubben 2000). B-vitamins, and folic acid in particular, may be useful in controlling homocysteine levels. Folic acid acts as a coenzyme in metabolizing homocysteine into methionine.

Signatures

And now he rose; and after due ablutions
Exacted by the customs of the East,
And prayers and other pious evolutions,
He drank six cups of coffee at the least,
And then withdrew.

—Byron, Don Juan

History

To the colonialist nineteenth century society, primitive peoples were regarded not as Good Savages but as inferior beings. Partly this is a reflection of the exploitative economic relations: it is psychologically comforting to degrade those one exploits. But as Stanley Diamond points out, the inferior savage is also a projected representation of the degraded image of human nature in nineteenth century Europe itself: a reflection of the increasing callousness and alienation of nineteenth century social relations.

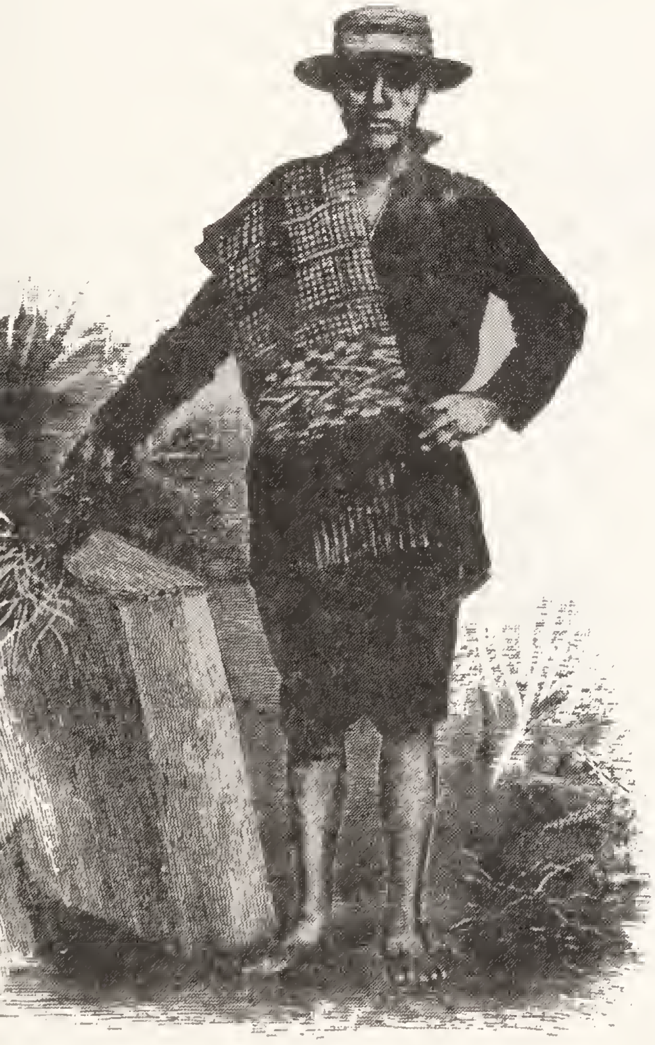
Thus in Guatemala, in 1838–1839, when a massive Indian uprising occurred, it was a Liberal regime that was toppled from power. The leader that emerged from the uprising, Rafael Carrera, partly European but mostly Indian, was supported by the Roman Catholic Church and by the Conservatives. Carrera represented the Rousseauist current: respect for Indians and their way of life, distrust of rapid importation of European culture and innovations, and always measuring "progress" against its impact on traditional culture. On the other side, the Liberals represented European ideals of democracy, industry, and economic expansion. In the Liberal program, the Indians were expected to assimilate, to give up their uncivilized way of life and join in the March of Progress. Carrera saw clearly that progress in its Euro-American idealization meant, in practice, the exploitation and impoverishment of the Indians who comprised two-thirds of Guatemala's population. The Indians had already suffered under two centuries of Spanish conquest and colonialism, but adaptations had been made on both sides, and a certain live-and-let-live accommodation had evolved.

Carrera was overwhelmingly supported by the Indians, who venerated him almost as a god, and his control of the country was near absolute until he died in 1865. During his administration Carerra instituted astonishingly radical (for the time) programs of land reform, protecting and even expanding Indian land rights. He instituted modest Indian educational programs. He regularly met with Indian delegations to listen to their grievances and to remedy them if he could. He brought many *ladinos,* Guatemalans of mixed parentage, into the formerly all-white government. He diversified the economy, trying to minimize Guatemala's export dependence on cochineal. In mid-century, German chemists had invented synthetic dyes based on coal-tar, and the demand for cochineal was falling. Carerra encouraged the growing of coffee, sugar, cotton, and indigo as export crops. But more than that, he discouraged imports wherever the product might be produced domestically. By the time he died, Guatemala was self-sufficient in all basic foodstuffs and had a positive balance of trade. Carrera's handpicked successor, General Vicente Cerna, unfortunately lacked his predecessor's consummate political skill and never had the full trust of the Indians.

The Liberals swept the Conservatives from power in 1871. The Liberals were by then a coffee party. They were tired of being provincial. They wanted progress. They wanted to look and live like their European and American cousins and for that they needed capital. Coffee seemed to be the answer to all their dreams. Foreigners were encouraged to buy land to start plantations. Plantation owners were given tax breaks. Coffee was exempted from the export tax.

Coffee plantations, of course, need land. The Liberals rewrote the land laws in a way that made it virtually impossible for the Indians, with their system of communal farming, to retain any legal title to their lands. The government promised to assist plantation owners in removing the Indians from their plantation sites, and delivered on their promise. Labor laws were passed that forced Indians to work for plantation owners, backed by penalties and punishments. Wages were so low that many Indians lived in continual debt servitude. Unable to farm their own gardens, the Indians and the whole country became import-dependent for food.

Wealth flowed into the country, but it remained in the hands of the aristocracy. Public works shifted from Carerra's emphasis on domestic infrastructure to urbanization, from interior roads to heavily capitalized railroads that led to the new coastal ports. Beneath the veneer of democracy, the army was more and more called upon to quell domestic unrest as the plantations pushed deeper and deeper into the interior. Remote villages that had lain relatively undisturbed for centuries, little interacting with the central cash economy, were suddenly disrupted by an overwhelming monetary force that had purchased not only their lands but their persons.



The chaotic nature of cash crop economics in the world system is independent of ideology. As in Cuba, a revolution can change domestic institutions, but the strangulating servitude to colonial economics continues. In Guatemala, for awhile, the signs of prosperity were compelling. The economic consequences of being a peripheral producer for the core countries became more apparent when coffee production in Central and South America, Africa, and the Indies finally caught up with and surpassed the demand. Prices fell, with disastrous consequences for Guatemala and the other peripheral countries that had already spent the expected money. It was a story to be repeated again and again in every part of the Third

World. It continues today. It is stamped on the label of every can or bag of coffee.

The Ally

> *The perfect drug for capitalism. Is there an office anywhere that does not have its shrine to the coffee gods?*

On the other hand, it's not a bad beverage for anarchists. Or for town meetings.

Who/what is it not good for—that should be our concern.

> *To find that out you'll have to quit.*

Hmmm, what about
trying excess
instead.

Signatures

Rimbaud went to Africa after he gave up poetry. He dealt in coffee, slaves, and guns.

History

The history of global coffee production is a laboratory for world system theory: of the interplay of globalized markets with domestic politics, and the reciprocal tensions between social classes, public institutions, and the modern nation state. By 1900 each of the Central American countries was ruled by coffee barons or coffee oligarchies, and yet each country maintained distinctive features based on their own history and traditions.

The power of the world market is not an absolute determinate. Costa Rica moved to coffee slowly and steadily, while Guatemala and El Salvador embraced it in a rush; parts of Nicaragua converted to coffee quickly while other parts developed strong local resistance. Costa Rica had land laws limiting the size of any individuals holdings, and allowed peasants to obtain land titles on the basis of "peaceful occupation." In Guatemala, El Salvador, and Nicaragua the government took possession of all nonplantation land by fiat, then acted as developer and broker, backing up its claims with ever larger military forces and armed police. Honduras developed a system of renting out family-sized farms for coffee. Still, the differences in the patterns of land ownership, and thus class structure, in the five countries are overshadowed by the sameness of the essential fact— displacement of the indigenous population—and the differences remain mainly differences of degree. If national police forces were unable to quell peasant or Indian uprisings, or if the resistance won the government through elections, neighboring countries or the United States would sometimes intervene with military force, as we have seen in our own times. In Nicaragua the old landed aristocracy are reclaiming their holdings: the Chomarro family being descendants of one of the wealthiest coffee barons. In Guatemala terror is still the instrument of state and oligarchic power as it was in the nineteenth century.

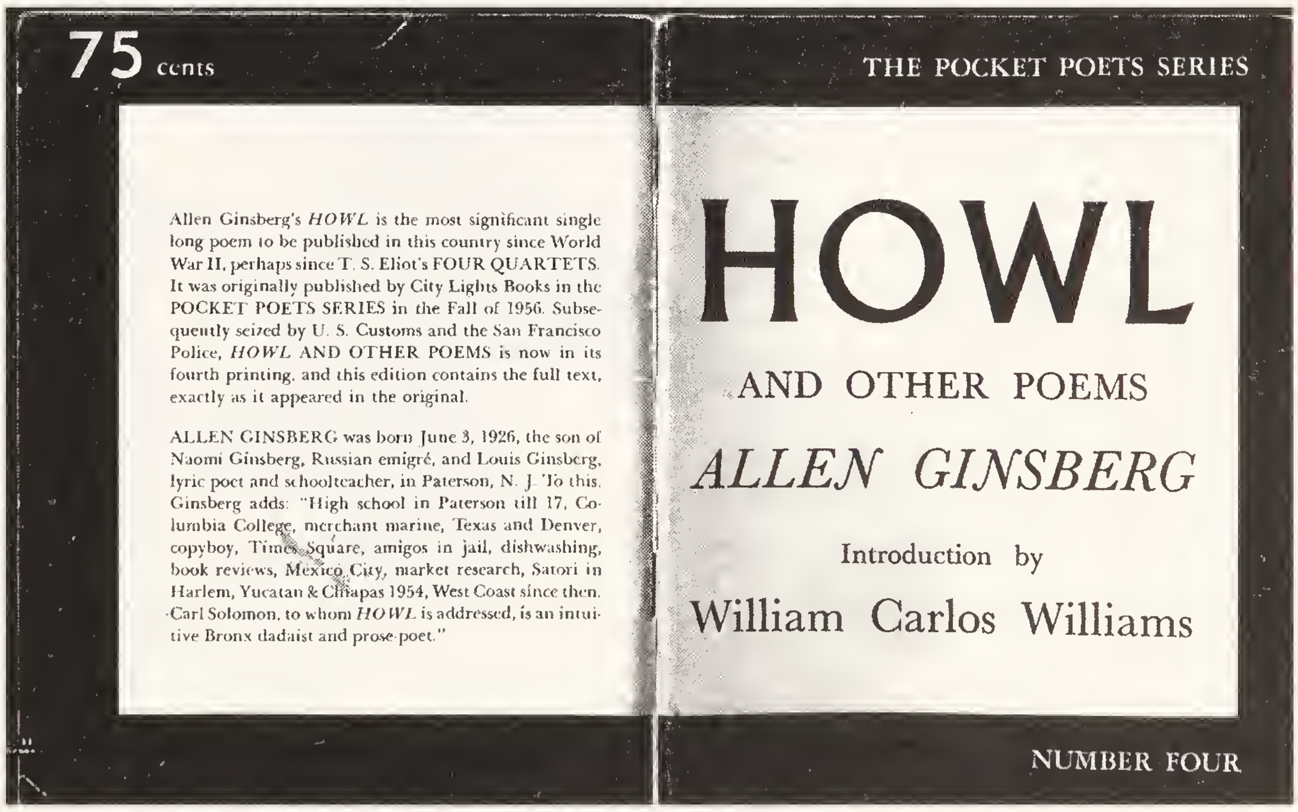
> *Coffee presents the clearest image of the excitantia as a whole. Through coffee, for example, we can understand the current war against coca as a mercantile struggle, as a continuation of the spice wars.*

Today the largest coffee producers are Brazil, Colombia, and the Ivory Coast. In 1975 a frost destroyed most of Brazil's coffee crop, and world coffee prices doubled. In the United States, consumer boycotts were initiated, and Congressional hearings took place. In actuality, by selling reserve stocks of coffee beans, Brazil's coffee exports were only reduced by one-third. The sudden rise in the price of beans was due more to panic than to shortage. Coffee producers and consumers tried to make peace by signing a new International Coffee Agreement. The ICA is an attempt to stabilize the market through production quotas, though the United States, by threatening to pull out, once used the ICA to force Brazil to curtail developing its own coffee extraction industry.

In some places, such as Kenya, villages have formed cooperatives, the community owning the land and growing, harvesting, and selling the beans. Politically aware coffee sellers make a point of offering co-op-grown coffee. In Kenya the cooperatives have been a great boon to the local land-based communities—women, in particular, have been obvious beneficiaries. Some cooperatives are more successful than others, some more egalitarian, some less so. And annual meetings can be factious and heated. But that is to be expected.

Signatures

Three centuries after their appearance in England, coffeehouses reemerged in the United States, again as alternatives to taverns and as intellectually-oriented hangouts, this time for bohemian artists and beatnik poets. The San Francisco poetry renaissance was born in coffeehouses like the Six Gallery and the Blue Unicorn, as was, a decade later, the Berkeley Free Speech Movement, at the Mediterraneum Caffe and the Forum. By the nineties, in cities like Seattle and Santa Cruz, coffeehouses were so numerous they seemed to be on every corner.



75 cents

Allen Ginsberg's *HOWL* is the most significant single long poem to be published in this country since World War II, perhaps since T. S. Eliot's FOUR QUARTETS. It was originally published by City Lights Books in the POCKET POETS SERIES in the Fall of 1956. Subsequently seized by U. S. Customs and the San Francisco Police, *HOWL* AND OTHER POEMS is now in its fourth printing, and this edition contains the full text, exactly as it appeared in the original.

ALLEN GINSBERG was born June 3, 1926, the son of Naomi Ginsberg, Russian emigré, and Louis Ginsberg, lyric poet and schoolteacher, in Paterson, N. J. To this, Ginsberg adds: "High school in Paterson till 17, Columbia College, merchant marine, Texas and Denver, copyboy, Times Square, amigos in jail, dishwashing, book reviews, Mexico City, market research, Satori in Harlem, Yucatan & Chiapas 1954, West Coast since then. Carl Solomon, to whom *HOWL* is addressed, is an intuitive Bronx dadaist and prose-poet."

THE POCKET POETS SERIES

HOWL

AND OTHER POEMS

ALLEN GINSBERG

Introduction by

William Carlos Williams

NUMBER FOUR

In New York City a coffeehouse on Columbus Avenue began operating as a singles dating service. By the late nineties, again following their old tradition of being centers of global commerce and communication, coffeehouses around the world were functioning as cyber-cafés, offering computer internet access along with espresso.

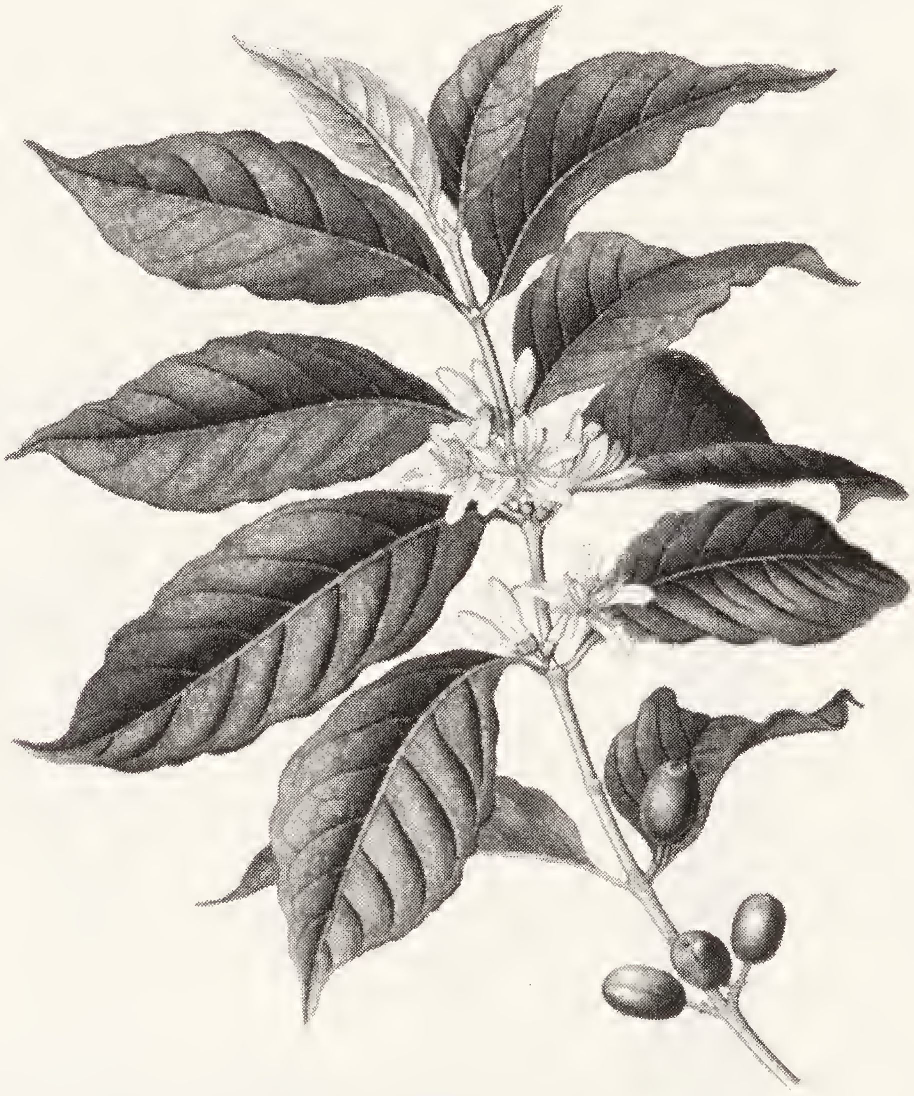
Effects Seems to shrink the male generative organ, at least in repose, part of its "cold" aspect …

The Ally Linnaeus said that coffee was for those who place saving time over their very lives and health, for "working into the night."

Some scientists believe that the majority of Americans are living in a state of sleep deprivation.

Signatures The Swedes and the Finns are the highest per capita coffee consumers. Americans consume 45 million pounds of caffeine per year, three-quarters of it in coffee. The average caffeine intake for Americans is 200 mg. per day.

The Plant Caffeine is an insecticide, disrupting reproductive DNA replication, possibly because of the structural similarities of methyl xanthines and the DNA purine



KOHLER, 1761

base. Certain insects, in response, have developed resistance to the alkaloid's effects. Caffeine's mutagenic toxicity also affects fungi and plants, and the buildup of caffeine in the soil of mature coffee plantations may contribute to the gradual deterioration of their productivity.

Toxicology

The LD50 for caffeine is around 150 mg/kg., equal to Voltaire's daily seventy-two cups being consumed at a single sitting. Sublethal doses can lead to convulsions, tachycardia, palpitation, low blood pressure, rapid breathing (tachypnoea), nausea, and vomiting.

Linkage of coffee drinking with heart attacks is mixed, some studies finding such, others not. One study found decaffeinated coffee to be a risk, but not regular coffee. Reports linking coffee drinking to pancreatic cancer lack evidence.

Purported teratogenic effects of coffee are, again, contradictory and inconclusive. Still, there is enough accumulated evidence, mostly from animal studies using very large dosages, that pregnant human females are advised by the FDA to limit or eliminate their caffeine intake. Other studies have found no association between heavy coffee drinking and birth defects, nor with low birth weight in infants. One study of fish, however, delivered evidence of long-term differences in dentritic spines and branching between control fish and those exposed to modest caffeine solutions 50 to 100 days after fertilization.

Caffeine ingested by nursing mothers is passed through the milk to the infant. Because infants lack the enzymes necessary to metabolize caffeine, it stays in their systems much longer than in adults (the half-life is ten times as long). High caffeine levels in the infant could result in insomnia, restlessness, and colic.

n Decaffeinated Coffee

It still tastes good. Some say it can still keep them awake.

> *Yeah, but an equal amount of caffeinated coffee would keep you awake more.*

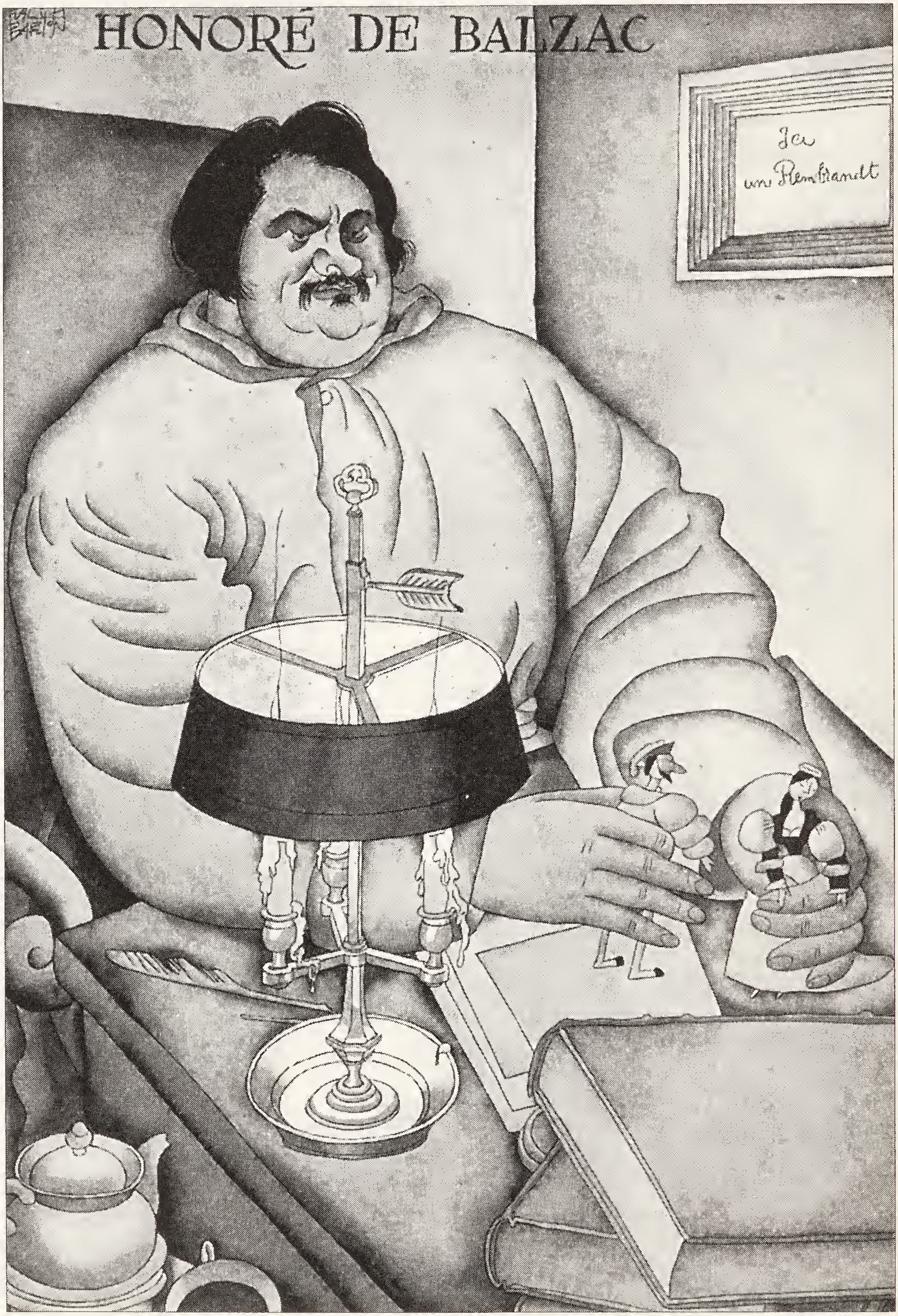
There are two methods of removing the caffeine. One method uses methylene dichloride to extract the caffeine from the green beans. The other method, the "water process," extracts the caffeine with water, along with a lot of other components. Then the dichlor is used to extract the caffeine from the aqueous phase in an industrial equivalent of a sep funnel. Then the rest of the stuff in the water has to be put back into the beans.

Many favor the water process because the solvent never touches the beans. But less than ten parts per million of the dichlor stay in the beans after roasting, and for anyone who ever walks into a chem lab or fills their own car with gasoline that is a pretty insignificant risk.

Decaffeinated coffee won't be any better for your ulcers, nor for your cholesterol.

How Taken

In alcohol, as a liqueur: Kahlua, Tia Maria, Bahia.


RALPH BARTON
HONORÉ DE BALZAC
Ici un Rembrandt

RALPH BARTON, HONORÉ DE BALZAC, 1928

CORRESPONDENCES

MACHINE	Calculator
METAL	Silver
METAPHOR	Measure
MINERAL	Steatite
MUSICAL INSTRUMENT	Boatswain's whistle
MYTH	Golden Fleece
MYTHIC HERO	Faust
NUMBER	Zero
OCCUPATION	Banker/Philosopher
OUT-OF-BODY REALM	Realm of Infinite Structure
PERIODIC TABLE COL.	Carbon
PHASE OF COITUS	Arousal
PHASE OF MATTER	Gas
PHYSICAL CONSTANT	Planck/*h*
PLANET	Sun
PLATONIC SOLID	Cube
POISON	Single Vision
QUARK	Up
QUANTUM FORCE	Neutrino
REALM OF PLEASURE	Brain
RITUAL EVENT	Caucus
ROCK	Granite
SEASON	Winter
SENSE	Cognition
SEXUAL POSITION	Missionary
SIGN	Canis Major
SIN	Pride
SOCIAL EVENT	New Job
TAROT KEY	Chariot
TIME OF DAY	Morning
TOOL	Chart/Map
VIRTUE	Fortitude
VOWEL	Middle Front/*e*

The Ally Balzac drank even more coffee than Voltaire—eighty to one hundred cups a day. He wrote more than one hundred novels.

> *Coffee falls into the stomach, and there is a general commotion. Ideas begin to move like the battalions of the Grand Army of the Republic on the battlefield. . . . The light cavalry of comparisons delivers charges, the artillery of logic hurries up*

with trains and ammunition, the shafts of wit start up like sharpshooters. Similes arise, the paper is covered with ink; for the struggle begins and is concluded with torrents of black water, just like a battle with powder.

—Honore de Balzac (1799–1850)

Signatures

Aromatic Colombia
Mellow Brazilia
Chocolatey Arabia
Spicy Yemen
Brisk Tanzania
Rich Kenya
Lively Puerto Rico
Walnutty Narino
Complex, cocoa-like Antigua
Smooth, buttery Kona
Nutty Mexican high-grown
Exotic, berry-like Harrar
Winey Zimbabwe
Well-rounded Indonesia
Floral Ethiopia
Light and earthy Java
Sweet Venezuela
Tangy Costa Rica
Soft-spoken El Salvador
Full-bodied, syrupy Sumatra
Vibrant and deep Blue Mountain, from Jamaica

Our culture, in a cup.

ummm, yeah, but
we're still waiting—
is coffee a good guy or a bad guy?

Poison.

One of the greats.

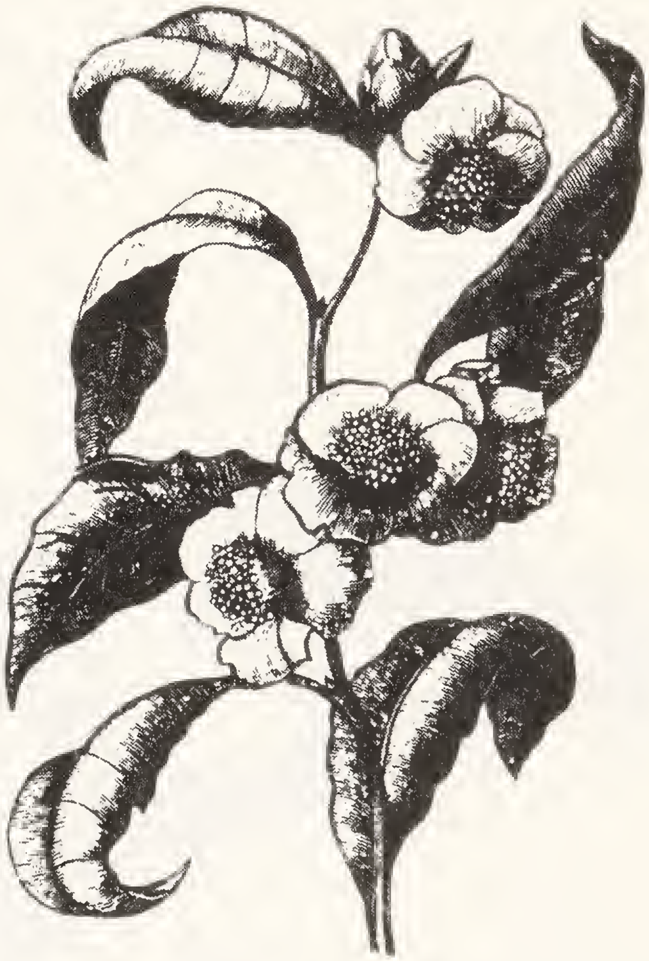
CAMELLIA SINENSIS

Common Names Tea. Cha. Chai.

Part Used The leaves, cured and packaged in several ways, depending upon the type of tea to be produced. There are three main types: green tea, oolong tea, and black tea.

Green tea is "unfermented." As soon as the leaves are picked they are steamed (the Japanese way) or "fired" (the Chinese way—quickly cooked by hot air). The steaming or firing arrests any ongoing enzymatic activity in the leaf. A "quick kill," you might say. After that the leaves are "rolled." Rolling breaks up the internal cell walls. After rolling the leaves are dried.

Black teas are "fermented," and oolong teas "partially fermented." After picking, the leaves are allowed to "wither," to partially dry on racks, either in sun or in shade depending on style. Unless the leaves are partially dried they cannot be rolled. Enzymatic degradation occurs during withering, thus the best teas are withered in dry weather when the process only takes a couple of hours. "Rain teas" require longer to wither and are less preferred.



TEA PLANT, FROM STRÄSSLE, NATURGESCHICHTE, 1885

After rolling, the leaves are spread out in a cool and humid place to "ferment," to further oxidize. The effects of the two stages of oxidation are evidently different, perhaps because after rolling more of the constituents of the leaf, essential oils and so forth, are exposed and participate in the various oxidizing reactions. That is why leaves for black and oolong teas must not be "killed" before they are rolled, as green tea is.

The oxidation turns the leaves a coppery brown. Oolong teas are only allowed to partially oxidize, twenty to sixty percent depending on the particular type of oolong to be produced. For black tea the process is allowed to run to completion. After the leaves have fermented precisely to the degree desired, they are fired (somewhat longer than for green tea).

As a final step, the dried leaves are sorted and graded by size.

There are many local variations and refinements of the processing stages, especially in China. Some teas go through several sortings, so that small flakes can be processed separately from whole leaves. The world's great distinctive teas are the result not only of regional differences in the strain and the growing conditions of the trees, but also of the particular methods of the picking and curing.

Or, in the case of many commercial teas, not.

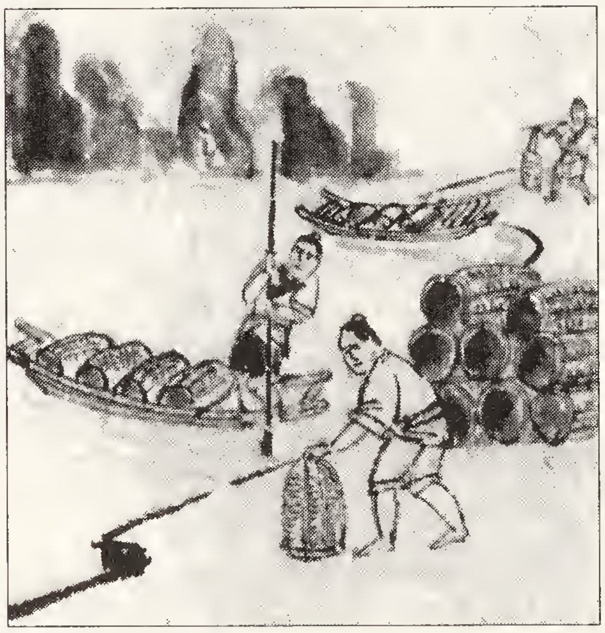
Signatures

Tung-Ting
Paper-Packed
Bright Virtue
Sour Box
Coniferous Evergreen
Harbor Tea

—some Taiwan teas, from Blofeld, Chinese Art of Tea

Taxonomy

Tea is native to Southeast Asia. Much of the history of tea in the West can be found in the story of its taxonomy. Linnaeus thought that black and green teas were different plants. This was a very excusable mistake, because all that Europeans knew about tea for two centuries they had to learn from the dried, cured leaves they traded from the Chinese. The Chinese had a monopoly and they guarded it carefully. It wasn't until 1842, by which time tea was the largest single item of English import, that a rather remarkable English ethnobotanist named Robert Fortune traveled in disguise to the interior of China to see live tea plants, collect voucher specimens, and correct Linnaeus's mistake. Black and green tea come from the same plant.



TRANSPORTING BALES OF TEA

Earlier, in 1823, another adventuresome ethnobotanist named Robert Bruce, living with the indigenous people in Assam, had discovered that they drank a tea from a native plant. After initial misidentification as another species of *Camellia,* an herbalist of the Linnaean Society correctly identified it as tea. Bruce mapped a hundred and twenty stands of the wild Indian tea plant, exploring Assam to the borders of Burma and China. The Chinese tea plant, *Camellia sinensis var. sinensis,* is bushy. The Indian tea plant, *Camellia sinensis var. assamica* is a tall, rangy tree. Bruce thought that Assam tea could be cultivated, but his employers, the British East India Company, disagreed. Tea tasters judged it "harsh" and "burnt." Instead, in 1851, they sent Robert Fortune back to China and this time he returned with 12,000 tea plants. Reasoning that Chinese tea would grow at the same places where the wild Assam trees grew, they uprooted the groves that Bruce had discovered and planted Fortune's Chinese trees, none of which ever produced any worthy tea.

The Company had already fired Robert Bruce for his daft preoccupation with wild tea. In 1853 however, his successor, George Williamson, decided that Bruce had been right all along and began planting the native broad-leaved *var. assamica.* The Company learned the fine points of tea cultivation by translating a book that was more than a thousand years old, Lu Yü's *Book of Tea.* We'll return to Lu Yü in "History."

By 1860 the Assam tea industry was well established. Assam trees were planted in Ceylon and Java. Today more Indian tea is grown than Chinese tea.

Tea was formerly placed in its own genus, *Thea,* but is now included within the camellias. Other *Camellia* species, such as *Camellia rosiflora* and *Camellia japonica* are grown as ornamentals.

Signatures

Ceylon Orange Pekoe
Earl Grey
Darjeeling
English Breakfast
Lapsang Souchong
Lady Londenderry

Chemistry and Pharmacology

Tea contains caffeine, twice as much by dry weight as roasted coffee beans. But since six grams of beans go into a cup of coffee, compared to around a gram and a half of tea, a cup of tea usually contains only about half as much caffeine as a cup of coffee. Other than caffeine, the chemistry of the two plants is quite different.

IRONSTONE POTTERY TEA LEAF DECORATION. A WHOLE LEAF AT THE BOTTOM OF A CUP WAS CONSIDERED AUSPICIOUS

Fresh tea leaves contain 22% polyphenols, 17% protein, 4% caffeine, 27% crude fiber, and small amount of β-carotene, B vitamins, vitamin D, and ascorbic acid. The vitamin C remains present in green tea, but is destroyed by the roasting and fermenting of black teas. The tannins in tea may be its most toxic constituent, linked in some studies to esophageal cancer. Milk or cream binds to the tannins and mitigates the danger. On the other hand, by stimulating the digestion, tannin combats the effects of consuming oily or fatty foods.

Catechin and other compounds in green tea are thought to be anti-oxidative and anticarcinogenic. It is said that anyone who smokes cigarettes should drink green tea daily.

Just don't think that will save you.

Recent studies (*Science News* 2000) have found that the rare and delicate white tea is even more potent as an antimutagen than is green tea, sometimes by a factor of five.

Some of the phenols in the essential oil are dangerous, though in a minimal sort of way. The reputed effects of the essential oils in calming the nerves probably far outweigh the dangers, unless the quantities involved are excessive. Tea also contains small amounts of theophylline, a strong diuretic, and a more powerful CNS stimulant than caffeine. Theophylline is used for treating asthma and emphysema.

Tea is contraindicated for insomniacs, and perhaps for the manic.

Signatures

Silver Needle
White Peony
Noble Beauty

—rare white teas from Fukien

How Taken

Drunk as an infusion. In Thailand, leaves of wild *Cammelia sinensis* trees, called *miang,* are sold in the markets for chewing, like betel. The leaves are folded and chewed with a piece of rock salt. The effects, according to Rob Montgomery, are "like drinking five cups of green tea all at the same time."

Effects

Quickens the spirit and soothes the stomach.

The Ally

THOMAS DE QUINCEY, TEA DRINKER, POISON PATH ADEPT

Surely every one is aware of the divine pleasures which attend a wintry fireside: candles at four o'clock, warm hearthrugs, tea, a fair tea-maker, shutters closed, curtains flowing in ample draperies to the floor, whilst the wind and rain are raging audibly without.

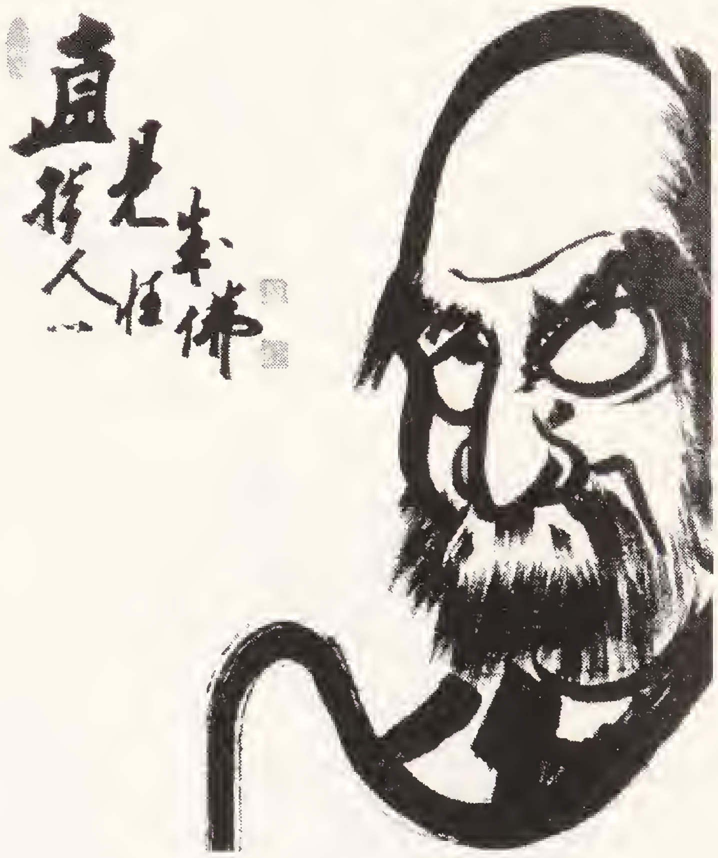
—Thomas De Quincey, Confessions of an English Opium-Eater

The Plant

One story tells that tea was discovered in 2737 BCE by Shên-Nung, the legendary plant doctor who could test scores of poisons in his own body in a single day and find antidotes for each of them. The great doctor was boiling water to make his dinner when some tea leaves were blown into the kettle by the wind. He drank the infusion, felt refreshed and invigorated, and recognized the plant's sublime virtues.

Shên-Nung was a Taoist sage, though long before Lao Tzu or Chuang Tzu had articulated Taoist philosophy. The ancient Taoist sages were plant people. Taoist emphasis on individuality and freedom contrasted with the Confucian ideals of hierarchy and duty (though Confucianists might term them "harmony" and "tradition"). Confucianism was stronger in northern China, Taoism in the south, and the south was the land of tea. And it was in southern China that Taoism—with its emphasis on emptiness and the yin—was most assimilated into Buddhism as Ch'an (Zen, in Japanese). Thus another story relates that tea was a gift of Bodhidharma, the Indian sage who "came from the west" and founded Ch'an Buddhism.

When Bodhidharma first arrived in China he was called before Emperor Wu. Wu was a scholar as well as a warrior. After he had overthrown his lord and set up his own kingdom in southern China, he became a great patron of religion. He was particularly interested in Buddhism, so when he heard that a great sage had arrived from India he was anxious to meet him. By the end of the interview his feelings may have changed.



HAKUIN, DARUMA (BODHIDHARMA)

Emperor Wu asked: "I have endowed many temples and aided many monks, what is my merit?"
Bodhidharma said: "No merit at all."
Wu tried again: "What is the first principle of the holy teaching?"
Bodhidharma answered: "Vast emptiness, nothing holy."
Wu asked: "Who is this confronting me?"
Bodhidharma answered: "I don't know."

After the interview, Bodhidharma traveled to the north. He crossed the Yellow River on a reed and retired into the mountains to Shao-Lin temple, where he sat for nine years facing a wall.

Once, after four years of sitting, overcome by fatigue, the Bearded Barbarian fell asleep. To prevent the recurrence of such a lapse, he cut off his eyelids and threw them to the ground. From the ground grew two tea plants, with leaves shaped like eyelids.

Some say that at the end of the nine years Bodhidharma's legs fell off.

That drinking tea is attested in a Chinese document three centuries before Bodhidharma's arrival in 542 in no way diminishes the truth of the story: it was in Buddhist temples that tea drinking particularly flourished and spread.

The Ch'an sect made tea drinking a part of their ritual. They offered tea to the Buddha, and shared tea from a passed cup. Pai-chang, the early T'ang teacher who instituted the distinctive nonhierarchical organizational structure that first defined Ch'an as an independent sect, was said to have included rules regarding tea drinking. Pai-chang broke with Buddhist tradition and made farming and other work a regular part of monastic practice. "A day without work is a day without eating," Pai-chang (called Hyakujo in Japanese) also gave some thought to the law of cause and effect, and is perhaps best known for once giving a full Buddhist funeral for the body of a fox.

So . . . how does a fox drink tea?

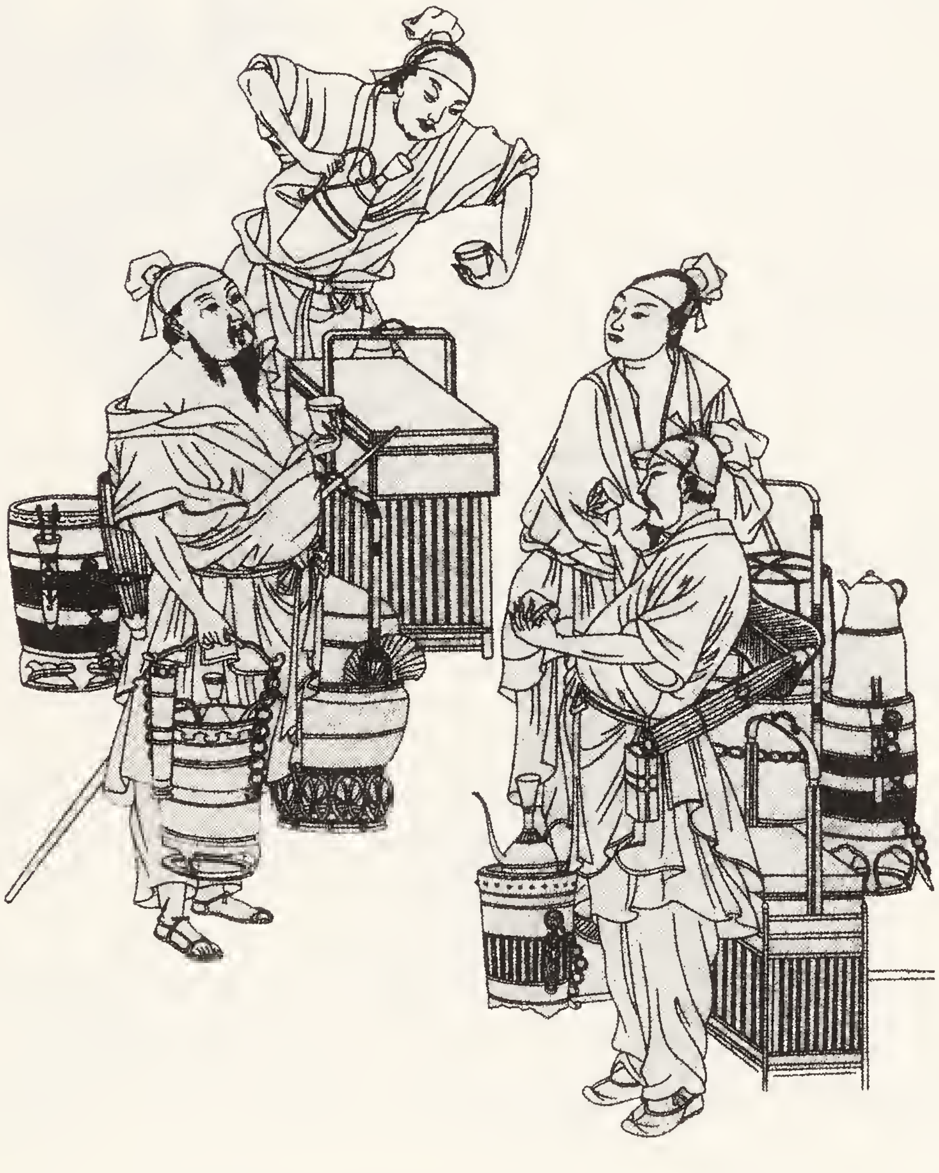
Tea appears in a number of Zen stories, mondos, and koans. Chao-chou said, "Have a cup of tea" to three different monks. Tung-shan once ran out of strength while cultivating a tea plot with Shen-shan. Lin-chi liked to bury people alive while he tilled tea. Yün-yen parched tea, with good fortune. Tsü-fu enjoyed tea after rice. Elder Lang once spilled tea and created a ruckus with the kettle gods.

Many Ch'an temples were in the mountains, ideal tea country, and many such monasteries cultivated tea and processed the leaves. If not an actual cash crop, tea was at least a refined and valuable commodity to offer visiting dignitaries and prospective patrons.

Kuei-shan, who is also known for his friendship with "Iron Grindstone" Liu, the mountain nun, once beat the drum to signal for everyone to go out and work in the tea garden. After everyone had been picking tea leaves all day, Kuei-shan said to Yang-shan, "All day as we were picking tea leaves I have heard your voice, but I have not seen your essence. Show me your original self." Yang-shan grabbed a tea tree and shook it.

Kuei-shan said, "You have attained only the function, not the essence." Yang-shan answered, "I wonder how you would answer the question?" Kuei-shan was silent. Yang-shan said, "You have attained only the essence, not the function." Kuei-shan responded, "I absolve you from twenty blows."

—Transmission of the Lamp



YUAN DYNASTY TEA VENDORS

Pre-T'ang tea was probably used medicinally more often than socially. A piece of writing dated the year 222 mentions tea as a substitute for wine. Early tea was boiled, usually along with rice, ginger, orange peel, other spices, and even milk.

Effects According to the Taoists, tea relieves fatigue, delights the soul, strengthens the will, and repairs the eyesight. Tea was an essential ingredient in the Elixir of Immortality.

The Plant

It was in the eighth century, in the creative years of the T'ang dynasty, that tea-drinking came fully into its own: drunk for its own sake, recreationally we might say, and not just as medicine. Tea's medicinal values were certainly recognized, not the least being that boiled water was safe to drink. Tea drinking diminished the spread of water-born infectious diseases, resulting in lowered mortality rates and a rapid expansion of the Chinese population. T'ang tea was pressed into cakes, from which it was shaved off and boiled. Tea cakes were even used as currency. Cake tea spread by caravan to Mongolia, Tibet, and Turkestan, places where it is still drunk in that form today. (The Russians also drink cake tea. While western Europeans were getting their tea by sea, the Russians were importing tea three thousand miles by caravan from Kayakhta, south of Lake Baikal on the Mongolian border, and itself a thousand miles across the Gobi desert from Peking. By 1796, at the end of the reign of Catherine the Great, Russians were consuming six thousand camel loads of tea per year.)

Perhaps because of the ceremonial drinking of tea in the monasteries, brewing, serving, and drinking tea began to be viewed as an art form, a social art. This ritualistic aspect of tea drinking became fully developed in China during the Sung period. From Sung China, powdered tea spread to Japan, where it reached an apotheosis in *chanoyu*, the tea ceremony.

The Ally

> *Teaism is the art of concealing beauty that you may discover it, of suggesting what you dare not reveal. It is the noble secret of laughing at yourself, calmly yet thoroughly, and is thus humour itself—the smile of philosophy.*
>
> *—Okakura Kakuzo, The Book of Tea*

The T'ang nobility took to tea as high culture, and a tea tribute was imposed on the mountainous communities where tea was cultivated or grew wild. The finest leaves went to the Son of Heaven himself. One prized variety was called "Monkey Tea." It was made from the top leaves of wild tea trees that grew deep in the mountains and could only be picked by trained monkeys.

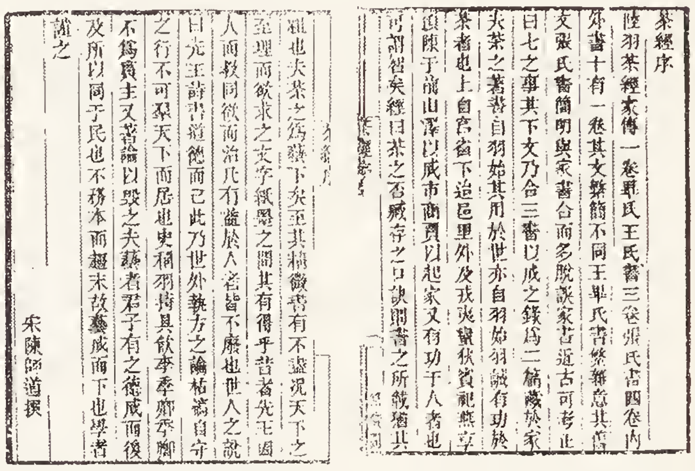
TEA LABORERS

By the end of the eighth century, 30,000 people were needed to pick, steam, dry, roll, and prepare the tea tribute, work that lasted for a month. The mountain people were forbidden to sell tea themselves.

Something about governments . . .

The demands on the farmers and villagers became even more severe in the following centuries, when tea cakes became the Central Country's main trading commodity for the northern tribes, from whom they needed horses. In the Sung, tea cakes became a kind of foreign aid, a means of bribing and pacifying the wild nomads on the frontiers. A bureaucratic blunder or failure in the tea crop could even trigger an invasion.

In the late eighth century a stuttering poet named Lu Yü composed the great classic of tea, the *Ch'a Ching.* This was the book translated a thousand years later under George Williamson. The *Ch'a Ching* was a three-volume work that covered every aspect of T'ang tea culture: botany, cultivation, grading, descriptions of the implements used in preparation and brewing, and anecdotes about famous tea drinkers. The *Ch'a Ching* became the bible of tea. Lu Yü was said to be able to identify not only any tea he was offered but also the source of the water in which it was boiled. His skill was tested by the emperor himself. Lu Yü was always a disappointment to his father, because he had embraced Confucianism instead of Buddhism.


茶經序
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謹之
宋陳師道撰

THE BOOK OF TEA (CH'A CHING)

Lu Yü eliminated all of the additives to tea except salt, which continued to be added to tea until the Sung. He thought it abominable to add even jasmine blossoms to tea. He wrote that the best water was from mountain springs that flowed over rocks with no moss. Mountain springs with moss were second best, followed by river water, and then well water. He considered blue the best color for the interior of a tea cup.

Another T'ang poet who loved tea was Lu T'ung, the "Tea Doter." Lu T'ung was enough of a Taoist adept to declare that compared to the taste of tea, he didn't care a bit about immortality. Days and evenings alike he brewed tea and composed poems, including his famous "Song of Tea."

The first bowl cleanly moistens my lips and throat;
The second banishes my loneliness;
The third chases through all dullness
To clarify every word I've ever read.
The fourth brings on a light sweat
That cleanses away life's troubles.
The fifth purifies my soul.
The sixth beckons me to the Immortals.
The seventh is my limit,
A light breeze breaks from my sleeves.

As T'ang tea bowls were wooden containers not at all small, we can recognize Lu T'ung as a master of our Method.

How Taken For those inclined to excess, those drug abuser types who are not already insufflating caffeine U.S.P. intranasally, tea is really a better beverage than coffee. Though there is less alkaloid per cup in tea, one can consume cup after cup without, as would be the case with coffee, liquefying one's insides.

The Plant Tea's popularity continued to grow through the T'ang and into the Sung dynasty, 960 to 1279 CE. The tea-house appeared. Tea contests were popular: "four teas, ten cups," in which connoisseurs vied to identify different teas in blind tastings. There was a "Tea Emperor," Hui Tsung, who wrote his own detailed and erudite book on twenty different kinds of tea, including the rare "white tea," his favorite.

Hui Tsung also dabbled in poetry and painting, with some accomplishment. He fell in love with a famous courtesan and shocked his country by exiling her husband and bringing her into the Palace to join his 3,912 wives and concubines. As she was obviously not a virgin, most considered this going too far. He spent so much time worshipping his muse that he neglected his kingdom. Affairs of state declined, and he was eventually deposed by invading Tartars and exiled.

How remote were those youthful dreams of mine
From this sad Mongolian wilderness!
Ah, where are the hills of my homeland?
I must bear the cacophony of barbarous flutes
Blowing piercingly among the plum blossom.

—Hui Tsung, tr. by John Blofeld

There was no good tea in Mongolia. There is a moral in this story. Let it be a lesson to you.

In the Sung, there were forty-six Imperial tea plantations, mostly in the south. The best picking time was the month of Excited Insects, and the best tea was picked at dawn before the dew had evaporated. Most of the pickers were girls and young women, who had to keep their fingernails cut to a very particular length, so that their fingers would not touch the leaves. They entered the fields before dawn to begin the picking, timing their movements to the music of drums and cymbals.

Tea-leaf picking:
she ties on her bamboo hat,
glances in the mirror.

—Shiko

"Small bud" and "medium bud" (a single leaf on each stalk) were the top grades. These were sent to the Emperor. "Purple bud" (two leaves on a stalk), "two leaves with bud," and "stem tops" were the three lesser grades.

Something . . . familiar sounding.

The leaves were fired as soon as they were picked. As soon as they were rolled and dried they were rushed to the palace by relays of horses.

The Sung was the golden age of tea in China. They recognized thirty-six different grades. Sung Chinese drank their tea powdered, whipping it up in a bowl with a bamboo whisk. Sung ceramics, the elegant tea bowls with the famous rabbit's-fur glaze, have perhaps never been equaled. Art and science both flourished. They printed books with movable type. They used gunpowder for blasting and to fire rockets and projectiles. They invented the curved iron plow, discovered the magnetic compass, and constructed the largest and most accurate water clock ever seen in the world. Their skills in medicines would not be equaled in the West for eight centuries. The extensive civil service was open to anyone who could pass the written examination covering science, art, philosophy, and history, providing a merit-based system for entrance into the government.

. . . and employment for a large number of poets

This golden age was to come to an abrupt end when, in distant Mongolia, Genghis Khan's mother encouraged her son to settle some scores and unite the tribes.

TEAPOT, CHINA, CH'ING DYNASTY, BASED ON MING DYNASTY MOTIFS. THE SCENE DEPICTS A SCHOLAR SETTING OUT TO VISIT FRIENDS, IN THE COMPANY OF A BOY SERVANT CARRYING HIS CH'IN, A STRINGED MUSICAL INSTRUMENT.

After a hundred years of Mongol rule, the Ming dynasty was founded in 1368 and tried to reestablish the historical Chinese traditions. Ming Chinese drank loose leaf tea, but the art of whisking powdered tea was preserved in Japan.

Drinking tea, eating rice,
I pass my time as it comes.

—Pao-tzu

How Taken

If one's guests are in a boisterous mood, it is better to give them wine to drink and, if they get somewhat tipsy, follow this up with a pot of very ordinary tea. It is only in the company of one's own kind, just those close friends with whom one can talk quietly about anything under the sun without formality, that one should call the serving boys to bring in the stove, fetch water and brew up some tea.

—Ming dynasty tea manual, quoted in Blofeld, The Chinese Art of Tea

Signatures:

Dragon's Well
Lion's Peak
White Cloud
Old Man's Eyebrows
Purple Snout
Snow Gorge
Jewelled Cloud
Sun-Poured
Green City
Hidden Peak

—Chinese green teas

The Plant

Tea was brought to Japan by Buddhist monks. At the beginning of the ninth century, three monks, Saicho, Kukai, and Eichu, each returned to Japan from China, bearing various strands of Buddhism and also the brick tea of the T'ang culture. Saicho served tea to Emperor Saga, a Sinophile who soon made tea a regular part of court life. Tea was served to Buddhist monks visiting the palace. Tea became featured at poetry parties, where the guests composed linked-verse renga. But when Saga died, the brief flowering of tea culture faded, except in the monasteries where the use of dancha, brick tea, was preserved.

The final successful landing of tea on the Japanese islands occurred several hundred years later, in 1191. A monk named Eisai had gone to China to study Ch'an Buddhism. When he returned he founded Rinzai Zen. Eisai brought back the Sung powdered tea, *matcha*, and wrote a book about its medicinal values. He also brought back seeds, which he planted at several locations. Eisai's plantations flourished, and one of them is still renowned for its fine tea.

Zen also flourished, the samurai class especially taking to it. Perhaps the directness and immediacy of Zen, along with its highly disciplined codes of behavior, appealed to the warrior spirit. Perhaps also, in the elegant sociability of tea, the samurai found a tempering to the blood-letting inclinations of their blades. Zen gave them a spiritual discipline, and tea gave them poetry and culture—things true soldiers must certainly crave.

The Ally

> *In our common parlance we speak of the man "with no tea" in him, when he is insusceptible to the serio-comic interests of the personal drama.*
>
> *—Okakura Kakuzo*

A man with no poetry.

> *Again we stigmatize the untamed aesthete who, regardless of the mundane tragedy, runs riot in the springtide of emancipated emotions, as one "with too much tea" in him.*
>
> *—Okakura Kakuzo*

Or those clinging to High Art, devoted to protecting the "finer values" while, around them, injustice and exploitation are rampant. Mao wrote a tract about that.

Signatures

Keemun
Fukien Red
Szechuan Red
Yunan Red
Crane Cliff Red
Sun and Moon Red

—Red (black) teas from China

The Plant

Tea in Japan is a story of poetry, a story of flowers and swords, and a story of Zen. The aesthetics articulated by the hokku and *renga* poets shaped the tea-house, and most of the poets were students of Zen.

The drinking of *matcha* tea spread from the temples to the general population all through the Kamakura period, (1185–1333). Zen temples sponsored large tea-drinkings for certain celebrations, to which the local townspeople were invited. The aristocracy likewise revived tea drinking, and tea contests appeared again. Tea became a central feature of summer bathing parties. The guests soaked in hot water, drank tea and sake, and composed renga poetry while local villagers came and gawked.

In the Imperial Court, many of the Zen rules (*sarei*) were adopted as part of the etiquette. Zen aesthetics were adopted as well. Calligraphic scrolls were displayed in Chinese-style rooms. Chinese bowls and utensils, expensive and highly valued, were displayed for the guests.

The idea that the serving of tea could be a spiritual path came from Murata Jukō, a student of the great poet and iconoclastic Zen master Ikkyū (1394–1481). Ikkyū encouraged Jukō's interest in tea, believing that tea could be used as "skillful means" on the Buddhist path, and presented Jukō with a valuable scroll of calligraphy by the Ch'an master Yüan-wu as a certification of his attainment.

Ikkyū asked Jukō, "What is the essence of tea-drinking?"
Jukō said, "It is Eisai's Quiet Mind of Tea-drinking."
Ikkyū said, "What about Joshū's tea?"
[Chao-chou said, "Have a cup of tea."]
Jukō was silent.
Ikkyū asked for a cup of tea. When it was presented to him, Ikkyū shouted "Katsu" and smashed it with his rod.

In 1482, during the Higashiyama epoch when various warlords were fighting for control, the eighth shogun, Yoshimasa, built himself a small, separate room for tea, where he could escape from the palace and meet with friends in a more intimate setting. Although conclusive proof is lacking, it is generally accepted that Yoshimasa's tea master was Jukō, and thus Jukō is credited with establishing the four and a half tatami-mat tea room as the standard.

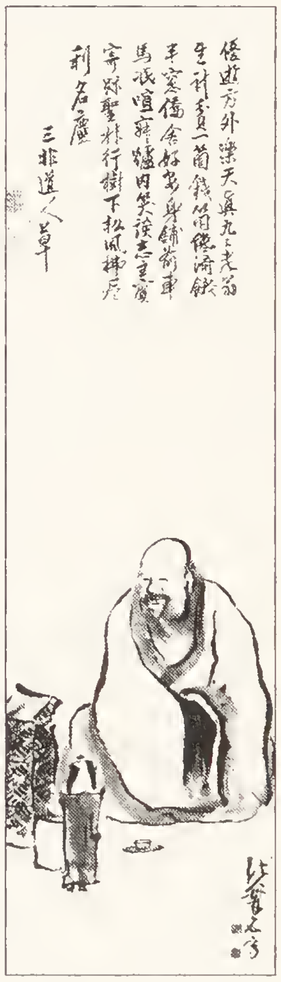
The Ally

Autumn is near—
I feel the pull
of the four-and-a-half mat room.

—Bashō

History

Yoshimasa's tea room contained a *shoin,* a low built-in writing desk, and some asymmetrical shelves. There was a leanness, a sparseness to the new tea room that reflected the emerging aesthetics of *renga* poets, such as Sogi and Shinkei. Jukō called this leanness "chill."



FROM CHANOYU KAIGA SHIRYO SHUSEI

Sabi, a feeling of poverty and solitude, was an ideal of Japanese poetry as early as Saigyō, and was rooted in the T'ang and Ch'an poetry of China. To *sabi* was added *yūgen,* a sense of the profound and subtle, and a celebration of what Shinkei called "the withered, the stunted, the cold." It is likely that Jukō knew Shinkei, and Jukō's "chill" was certainly influenced by Shinkei, who was also a Zen practitioner. These different modes, *sabi, yūgen,* and later *wabi,* became another way to "link" haikus into *renga.* Shinkei called linking *renga* through mode "remote linkage," as contrasted with the "close linkage" through image. The distinctions between the various forms of remote linkage became highly refined and articulated.

Lotus leaf dewdrops—
all I need
for morning tea.

—Issa

Ikkyū distrusted blind adherence to rules, and Jukō followed his lead. Jukō sought to erase the distinctions between Chinese treasures and locally made Japanese pottery. He also tried to incorporate the Buddhist ideal of equality into tea, hoping that the tea room might be a place where people could drink tea together as peers, without regard to the usually rigid distinctions of class and birth.

No host. No guest.

Ikkyū would certainly have approved this idea, as also Jukō's shift in emphasis onto the drinking of the tea itself, rather than on the connoisseurship of Chinese objects of art, which was the prevailing practice of both the nobility and the merchants.

A generation after Jukō, Takeno Jōō (1502-1555), another Zen tea master, further refined Jukō's ideas. Jōō thought that "chill" was too aristocratic, and that "leanness" had degenerated into the mere mixing of disparate objects. Again taking his lead from the poets, Jōō created *wabi* as the aesthetic ideal of tea. *Wabi* has many meanings, and the meanings have changed through time, but its main innovation was to add "commonness" to the solitude of *sabi* and the sublimity of *yūgen. Wabi* comes as close as any word to describing the whole tone of Japanese aesthetic sensibility, from haiku to Nō drama to flower arranging. But it was one of Jōō's students, Sen No Rikyū, who brought *chanoyu,* the tea ceremony, to its greatest perfection.

The "thatched hut" image—the hermit monk living in poverty and solitude—had its roots in Chinese Buddhism and Taoism, and Chinese poetry. While the thatched hut had never been forgotten by the Japanese poets, it was perhaps honored more in theory than in practice, at least until Basho. But before Rikyū there had been little of the thatched hut in the refined perfection of the tea room. Rikyū added the thatch. He also lowered the door so that it was necessary to stoop to enter the room. He began using unfinished and even broken materials, natural surfaces, bamboo, and wooden utensils.

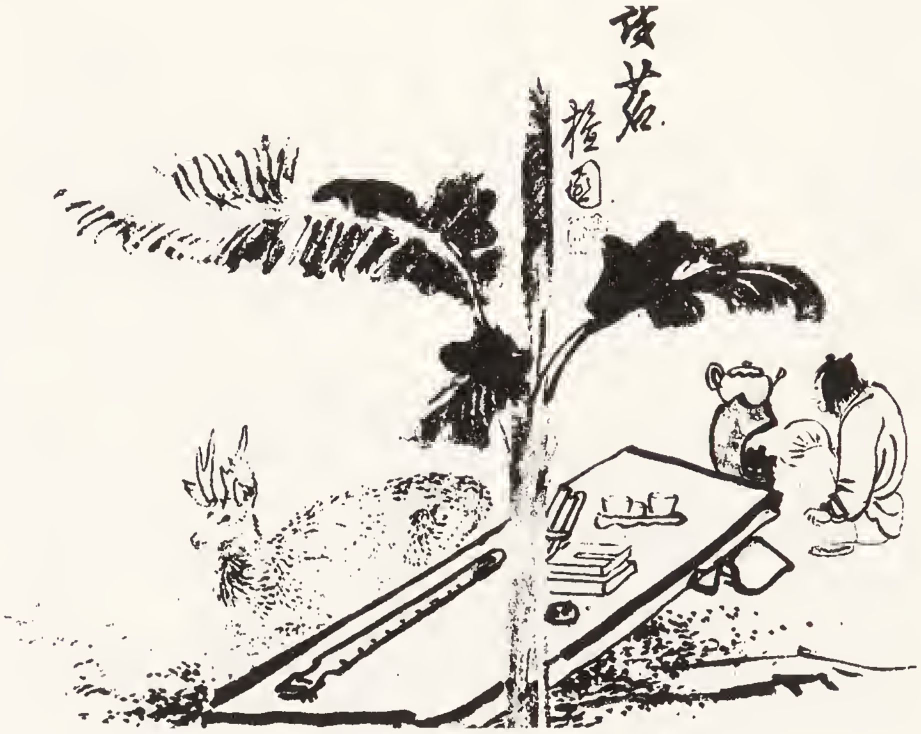
A celebration of imperfection.

But none of it was arbitrary. Rikyū stressed that finding the harmony between an unglazed bowl, the rarest and finest of Chinese vases, and a few cut flowers required the highest artistic sensibilities. As might be expected, this hyper-refinement of taste was eagerly sought after by the nobility (of which Rikyū—born merely into a wealthy merchant family—was not). Rikyū served as tea master under Odu Nobunaga, who had unified much of Japan. When Nobunaga was assassinated in 1582, Toyotomi Hideyoshi took control of Japan, and began completing the unification that Nobunaga had begun. Hideyoshi took possession of all of Nobunaga's valuable tea utensils, and also of his tea master, Sen No Rikyū.

Rikyū was one of the first tea masters to cultivate morning glories. When word spread of the many splendid morning glories blossoming in his garden, Hideyoshi

> *commanded a morning tea service to view them. When he arrived every trace of the vines had been cleaned out, and he entered the tea room in a smouldering rage. There in the alcove was a single morning glory, deeply tinged and exquisitely beautiful. Hideyoshi understood and was full of praise.*
>
> *—Pointing to the Moon, Sotan's Anecdotes of Rikyū's Tea*

Rikyū became known as the foremost tea practitioner in Japan. He also became the personal confidant of Hideyoshi. It was said that no one could speak with Hideyoshi without going through Rikyū. Rikyū's innovations in matters of tea, along with his stinging criticisms of those lesser practitioners whom he dismissed as having "no understanding," certainly made enemies.



TEA DRINKING: THE RUSTIC IDEAL

> *One time Hideyoshi tried to trap Rikyū with a seemingly impossible task. Hideyoshi filled a large bronze bowl with water and placed it in the alcove. Beside it he placed a plum branch with crimson blossoms, and ordered Rikyū to make the flower arrangement. Without hesitation Rikyū held the branch upside down over the bowl and stripped off the flowers by lightly pulling his hand down the branch. The open blossoms and buds floated together on the surface of the water. Hideyoshi appeared delighted, confessing that he had tried to embarrass Rikyū, but that the man could not be flustered. Other members of the court, however, thought that Rikyū's conduct towards his lord was presumptuous in the extreme.*
>
> *—adapted from Sotan: Pointing to the Moon*

Rikyū stressed tea as a means of attaining realization of the Buddha-dharma, one's conduct in the tea room being both proof and practice. But along with his Zen, Rikyū also preached Pure Land Buddhism, the Buddhism that teaches that salvation comes from the grace of Amida Buddha, rather than from one's own efforts (and, in fact, that striving for salvation is pointless, because Amida has already saved all beings, regardless of what they do). The effortlessness of Pure Land Buddhism merged seamlessly with the austerity of Zen in Rikyū's tea style. Some Jesuits, who were mixing in Japanese politics at the time, even claimed that Rikyū was a Christian. Rikyū scrutinized every detail of the tea ceremony: the garden, the hut, the laying of the charcoal, the precise placement of the utensils—

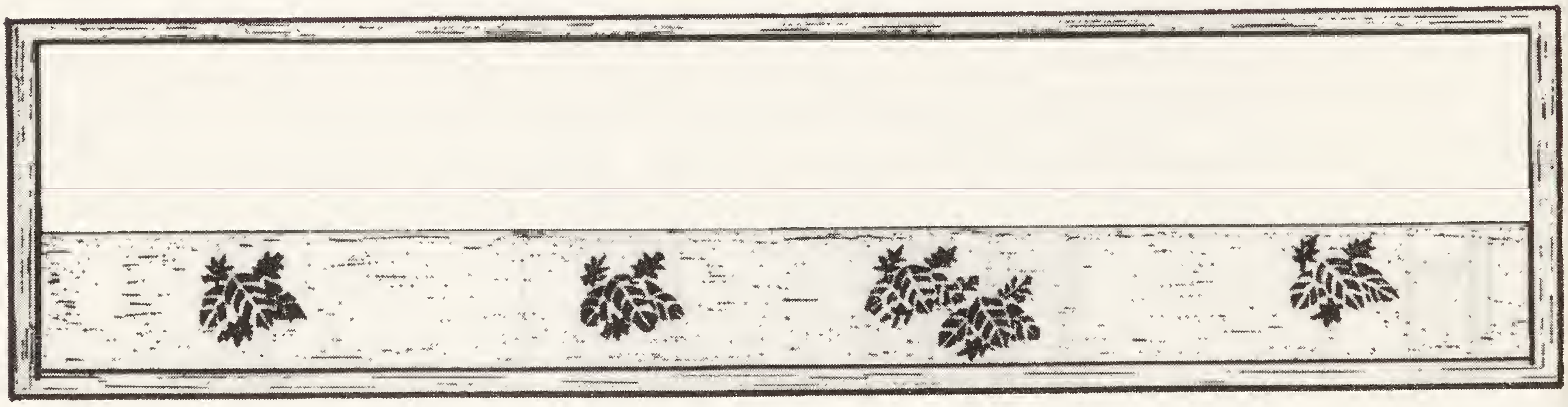
and critiqued the good or bad taste of each tradition or innovation—and he was an innovator. But above all he insisted that without naturalness and spontaneity the ceremony was a sham. That was the true lesson of tea.

> *As a general rule concerning the cleaning of the roji [the entrance garden, through which the arriving guests walked through on stepping stones], if guests are to come in the morning, one should sweep the previous evening; if at noon, one should sweep in the morning. After that, even if fallen leaves should collect, the accomplished practitioner will allow them to lie as they are.*
>
> *—Rikyū, in Sotan*

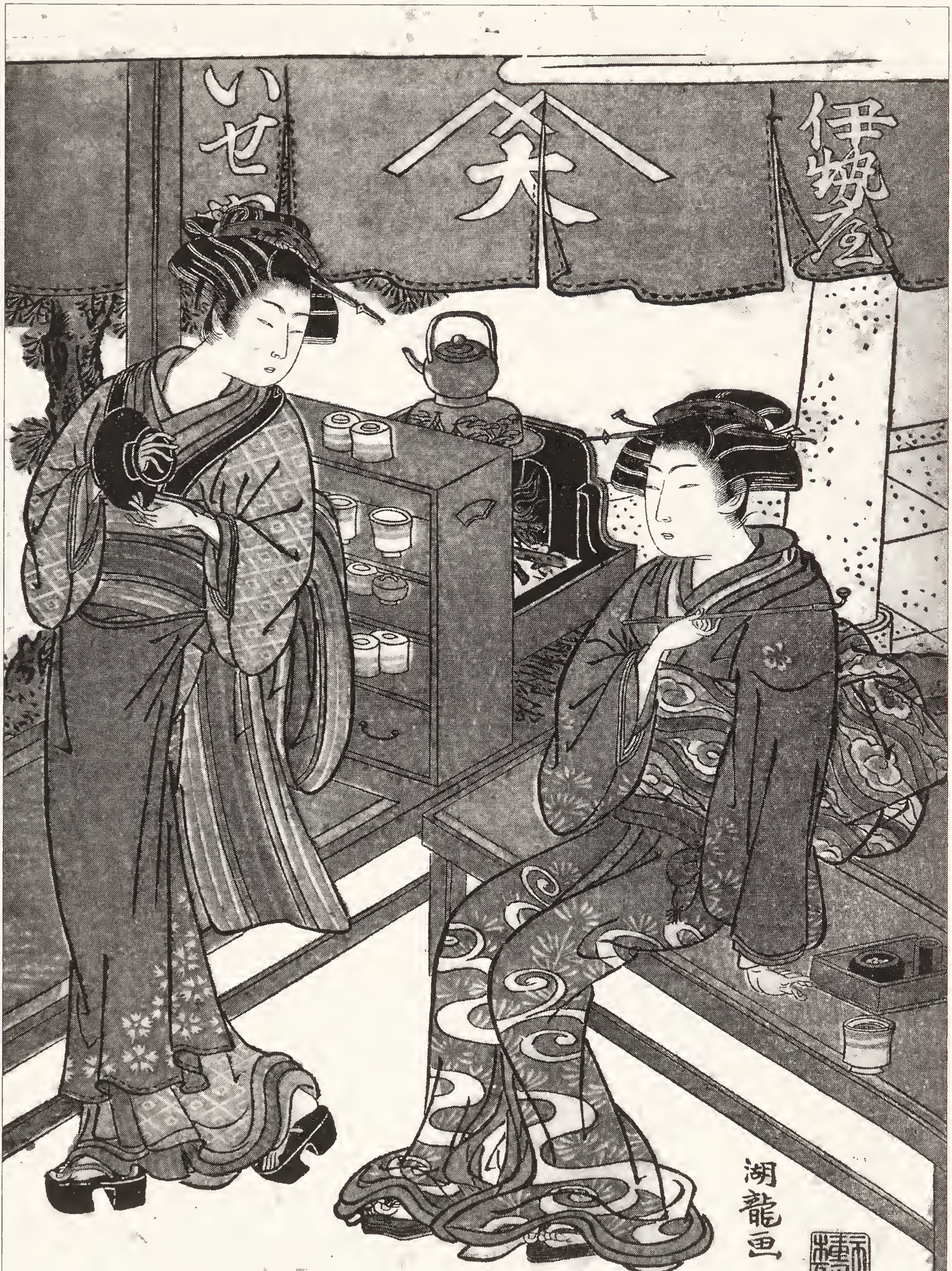
Rikyū eventually fell from grace. Having united Japan, Hideyoshi was making plans to invade Korea. Rikyū was in the dove party, advising against the plan. To make matters worse, his daughter had refused to become one of Hideyoshi's concubines. The final straw concerned the great new gate to the Daitoku-ji temple. Rikyū had promoted and supported this project earnestly, but as more and more of the funding was withdrawn in anticipation of the planned invasion, it began to appear that the gate might not be completed. Clearly exceeding his authority, Rikyū hired extra workers and had them work overtime to complete the construction. He also commissioned a wooden statue of himself to be carved and mounted over the gate. Rikyū's position at court had been slipping already—his principal defender had recently died—but now his fate was sealed. In 1591 Hideyoshi ordered him to commit *seppuku*, ritual suicide.

Rikyū held a last tea for his close disciples. After the tea he dismissed all of his guests but one. Rikyū removed his robes, revealing that underneath he was wearing the traditional all-white clothes of those about to disembowel themselves. He unwrapped the short sword, composed a death poem, cut himself open, and died.

> *Seventy years of life—*
> *Ha ha! And what a fuss!*
> *With this sacred sword of mine,*
> *I do kill both Buddhas and Patriarchs.*
>
> *—Rikyū's death poem*



RIKYU'S DESIGN FOR THE RAMMA (CARVED TRANSOM)
OF THE SANGETSU-TEI TEA HUT AT OMOTESENKE IN KYOTO



CHANOYU KAIGA SHIRYO SHUSEI,
COMPILATION OF MATERIALS ON THE TEA CEREMONY

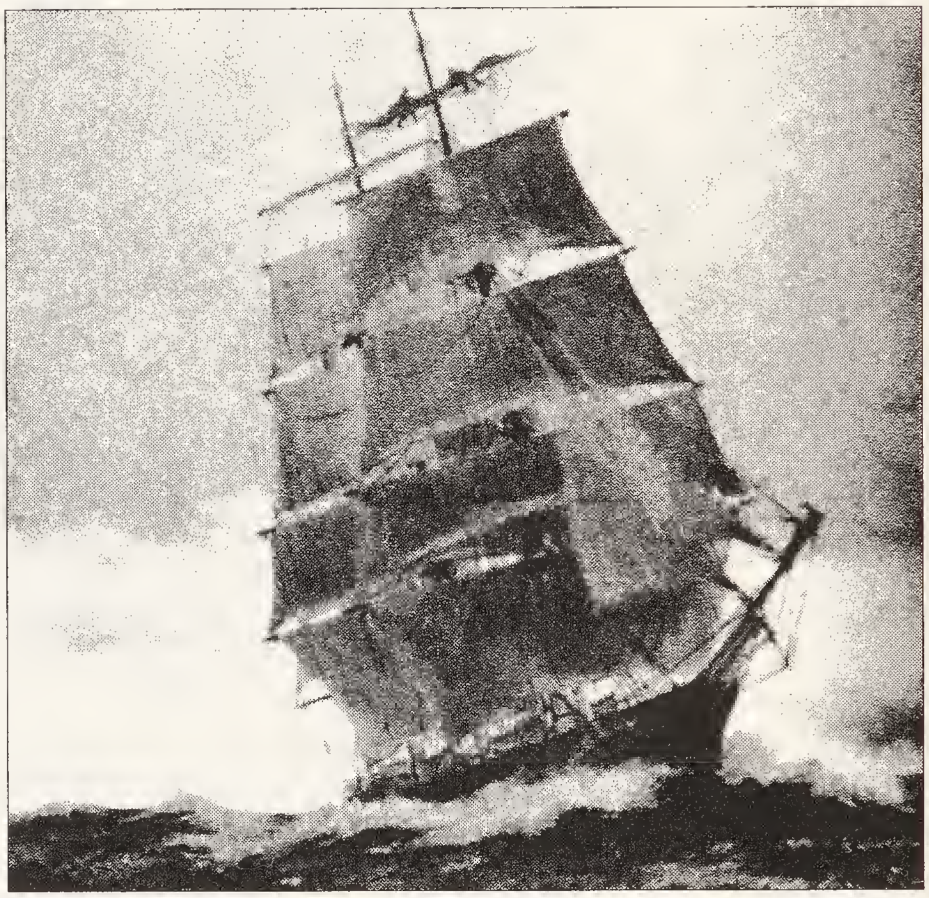
There. Now isn't that a better story than learning more about the pharmacology of caffeine?

> *Once, after Rikyū's enforced suicide, Hideyoshi came across an old brazier that intrigued him. He muttered softly that it was at such times that he felt the loss at having killed Rikyū.*
>
> *—Pointing to the Moon, Sotan's Anecdotes of Rikyū's Tea*

Signatures

Iron Goddess of Mercy
Hairy Crab
Buddha Hand
Iron Arahat
Iris Fairy
Great White
Black Heap
Red Border
Great Red Robe
Small Leaf
Booster
Clear Fragrance
Requiring Skill
White-Haired Monkey
Sparrow's Tongue
Lotus White
White Fur
Purple Fur
Dragon Phoenix

—semi-fermented (oolong) teas from the Wu-I mountains, from Blofeld


THE TEA CLIPPER CUTTY SARK

History Tea was unknown in Europe until the latter sixteenth century. Arabian travelers visiting Canton had mentioned tea as early as 879, and Marco Polo made note of a Chinese official who was deposed for arbitrarily raising the tea tax, but these were lost fables. European contact with tea began during Rikyū's lifetime.

A Portuguese merchant, describing what he had seen in Japan in 1546, wrote that they enjoyed drinking "hot water." A Jesuit writer named Luis Frois, writing home from Kyoto in 1565, said the same thing. Perhaps neither of them ever drank any tea during their stays in Japan, though that would have been extraordinarily rude. More likely, drinking a hot beverage was so utterly exotic that they didn't realize that it was an herbal infusion. The myth that Japanese drank "hot water" persisted for some time. When some Christianized Japanese, visiting King Philip II in Madrid in 1585, mentioned that they produced wine in their country, the King was surprised, saying that he thought they only drank hot water.

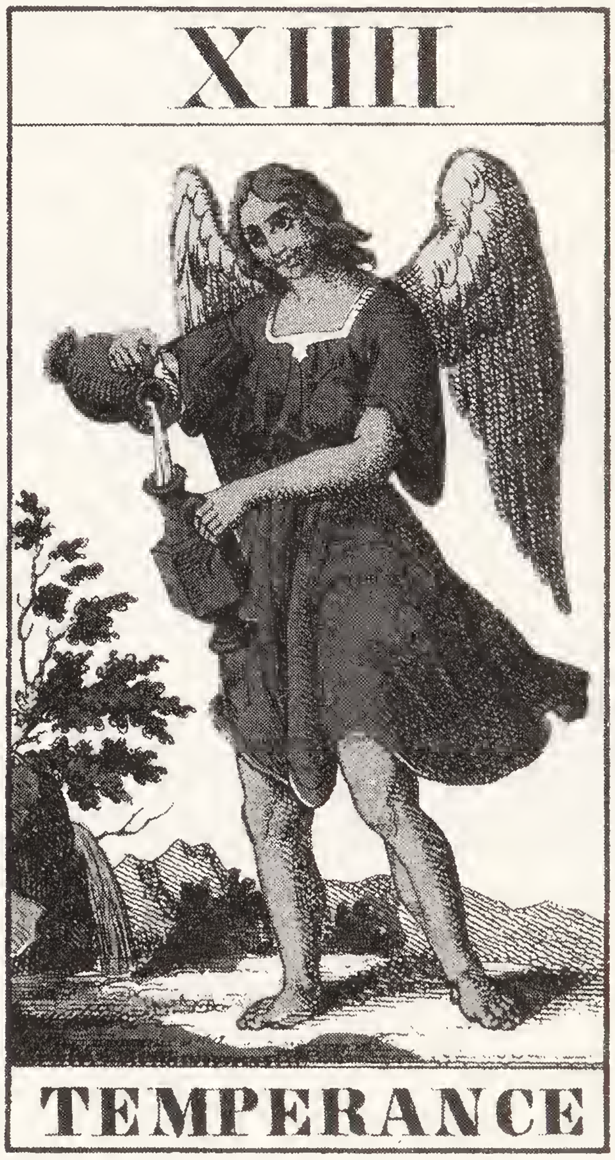
The first accurate description of tea drinking was written in 1565 by Luis de

Almeida, an experienced missionary who had also been trained in medicine. Almeida wrote of "a certain boiled herb, which is called *cha* and which is tasty to anybody who has become accustomed to drinking it."

As the Jesuits began to realize the importance of tea drinking in the life of their prospective converts, the missionaries were encouraged to become acquainted with the practice. Reports of *chanoyu,* the tea ceremony, appeared soon after in their writings, along with detailed instructions on maintaining a tea room and serving *cha.*

Tea arrived in Lisbon in 1580, and the Portuguese were the first Europeans to drink it. But the Portuguese trade with Japan was limited, and their whole venture was destined to come to an abrupt end. The missionary zeal of the Jesuits, as well as their predilection for mixing in local power struggles, was finally their undoing. The Japanese threw all of them out in 1641, and killed or forced recantations from the many thousands of Japanese who had been converted to Christianity. Japan closed her ports to all Europeans except the Dutch, who were allowed a limited trade at a narrow sandbar near Nagasaki, but were not allowed to go ashore. The isolation saved their country.

Japan's only import need was silk. For this they traded copper. The Dutch, in turn, traded the copper to China for silk. For tea, the Chinese wanted silver, or gold. All of the tea drunk in Europe came from China. All of it came through Canton.



Correspondences

> *The Present is the moving Infinity, the legitimate sphere of the Relative. Relativity seeks Adjustment; Adjustment is Art.*
>
> *—Okakura Kakuzo, The Book of Tea*

Thus the tarot card of tea is Temperance.

The Ally

> *Tea is in my opinion a phantasticum, coffee an energeticum—tea therefore possesses a disproportionately higher artistic rank. I notice that coffee disrupts the delicate lattice of light and shadows, the fruitful doubts that emerge during the writing of a sentence. One exceeds his inhibitions. With tea, on the other hand, the thoughts climb genuinely upward.*
>
> *—Ernst Jünger*

History

The Dutch were the first European tea merchants. From early in the seventeenth century until 1670 the Dutch East India Company was the richest corporation in the world, employing 20,000 sailors, 10,000 soldiers, and 50,000 civilians. The Dutch were challenged by the British East India Company, and by 1686 the British had overtaken them. The British East India Company soon held a virtual monopoly on the tea trade, which they maintained until 1834, when such monopolies became unfashionable.

Manchu China bore little resemblance to the sophisticated and cosmopolitan Sung. The government, foreigners themselves, distrusted other foreigners. European traders were restricted to a few docks in the harbor at Canton, and were only allowed to trade with a specially licensed group of Chinese middlemen, the *hongs*. For two hundred years, while the tea trade grew exponentially to become one of the largest single items of European commerce, the Europeans had no knowledge of where tea actually came from, how or where it was grown, what it looked like, or how it was processed. Perhaps such protective hoarding was contrary to the spirit of tea. The result, in any case, was the invasion and subsequent looting of China.

Signatures

Cloud-Burner
Height-Hater
Ten-Foot Green
Peony King
Drunken Concubine Yang
Handful of Snow
White Leaf
Spring Every Night
Trouser-Seat

—P'u-Erh teas from Yunnan

A *Brief Meander through Opium*

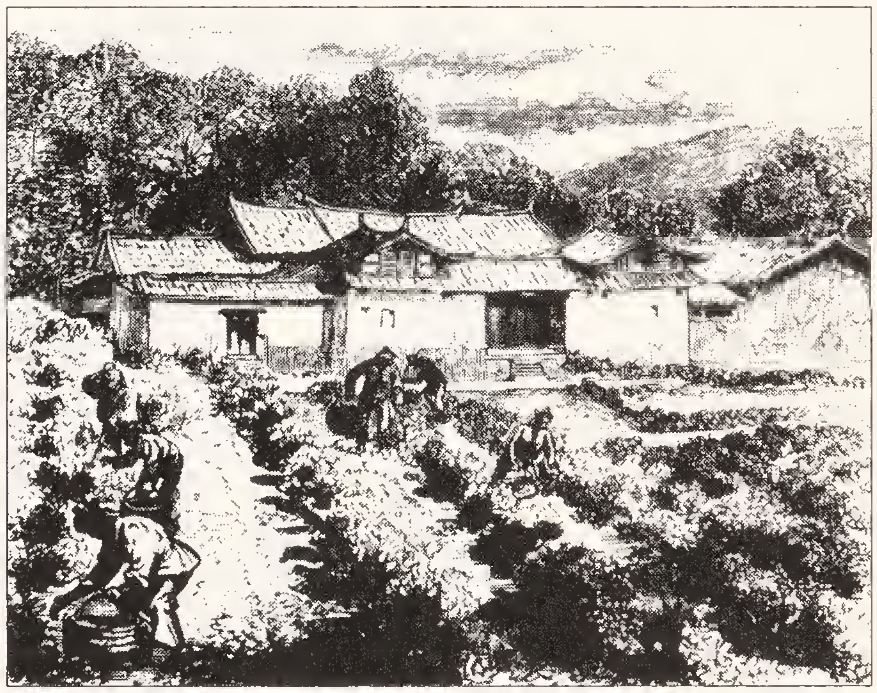
By the early nineteenth century, European inflation caused by the Napoleonic wars and by the strange attractors inherent in capitalism, had reduced the market value of tea relative to silver. And as the Chinese demanded silver for tea, the East India Company found itself in a severe economic squeeze. The Company found a nearly perfect solution in opium.

The British Government had given the East India Company completely free reign in India—the Company was a government unto itself. The priority of the East India Company was profit, not conquest. Nonetheless, by 1757, when the French and Indian War broke out, the Company had subjugated much of India, if haphazardly. A former clerk, Robert `Clive, beat the French at the Battle of Plassey, and British control of India, and her monopoly on opium, was secure. Clive also seized the immense treasure trove that the regional Indian kings had been hoarding for centuries. This treasure, characterized as the largest cache of uncirculated wealth since Alexander captured the Persians, was the seed capital for England's Industrial Revolution.

China had outlawed opium in 1729, an anti-drug law that had as much to do with the Confucian moral and religious attitudes of the ruling mandarins as with public health issues. Some of the rationale may also have been economic. Either way, the law was tragically wrong-headed. Black market conditions meant that the British could demand silver for their opium.

The black market opium trade was originally in the hands of the Portuguese. When the English took over the trade at cannon point, it amounted to about 3,000 pounds of opium per year. Over the next century the British increased this trade to 3 million pounds a year. When the British government ended the East India Company's monopoly in the tea trade in 1834, the doors were open for American and other foreign ships to join in the tea and opium trades along with the British.

In 1840 the Imperial Government tried to stop the opium trade by force, burning warehouses in Canton and jailing British and Chinese traders. The British declared war and attacked China with both land and naval forces. China lost the war, and along with the war a great deal of her autonomy. More wars followed, for the next half century, each invasion by Western powers further weakening and disrupting the country. Culture and economy both declined. Chinese art treasures flowed to the West. Corruption was rampant. But even without the looting and the corruption the result would have been the same. When the economic forces of world-based industrialized countries are given uncontrolled access to a traditional culture, the result on the invaded country is always impoverishment.



TEA HARVEST. FROM DAY, TEA: ITS MYSTERY AND HISTORY, 1978

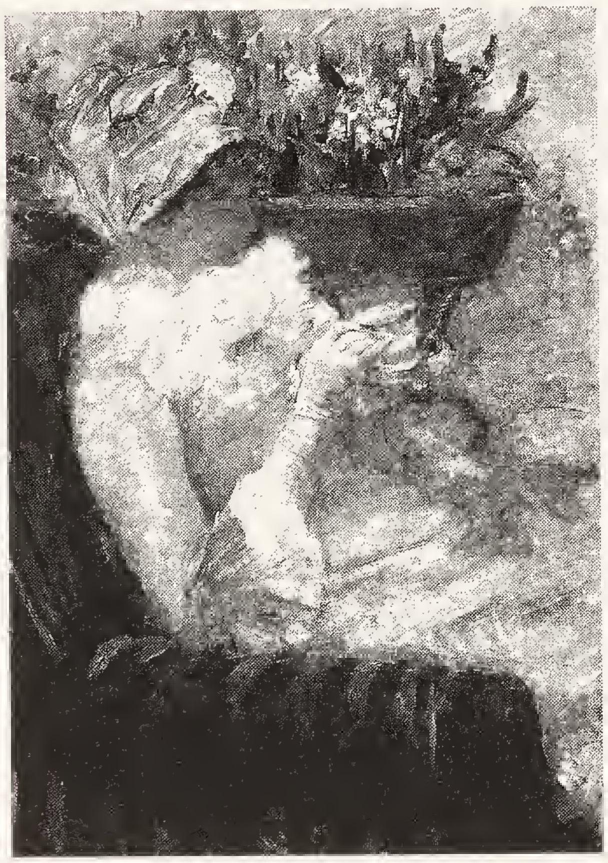
That a country that had been one of the most advanced civilizations in the world for more than four millennia fell so easily is worthy of study. Other cases of advanced cultures falling to less advanced civilizations come to mind: the Conquest of Mexico, surely, and the Norman Conquest of 1066. Not that the Europeans of the nineteenth century were barbarians, but they had certainly been playing catch-up to the country that had been the technological leader of the world for most of their history.

It is important to be clear about the dynamics here. A state-supported monopoly power was able to produce cheap, commodified opium by force and threat of arms. Monopoly control of another drug, tea, by both trading partners, created an economic niche begging for exploitation. All of the dynamics revolve around the possibilities for profit in circumventing the strictures of a narrowly sanctioned monopolistic trade. None of it involved "free trade," if I may redefine free trade here as trade between two free partners, each with some semblance of autonomy.

Opium, per se, poses minimal threat to a healthy society. This is not true of corruption. Let's study this case carefully, as it is obviously still pertinent. The Chinese had lived with opium for centuries: it was a valued medicine and was used whenever appropriate. Commodified opium had entirely different dynamics, which were only made more destructive when the commodity was forced into the black market. It created gangs, corrupt officials, distrust and disrespect for the government, and finally, the virtual dissolution of the country.

Let's go further—I'm a little giddy from all this tea—
"and thus a need arose in history for Revolution . . ."

◑


MARY CASSATT, THE CUP OF TEA

Effects

Stimulates circulation of the blood;
stimulates clear thinking and mental alertness;
increases the body's powers of resistance;
a cleansing and invigorating effect on the skin;
clears and facilitates the flow of urine;
brightens the eyes;
assists the digestion;
mitigates the effects of summer heat;
eases pains in the limbs and joints;
decreases secretion of mucus;
assuages thirst;
banishes depression;
promotes long life.

—traditional claims made for green tea, in Blofeld

The Plant

England could have grown coffee in her colonies, so why did the English change to tea? Some of the taste for tea probably emanated from Catherine. Charles the Second, the Restored, married Catherine of Braganza. She had learned tea drinking in Portugal, and had brought her taste with her to England. It is said that, Charles, if he did not love her deeply, nonetheless showed every concern for her happiness and made sure she was supplied with tea.

Venus her Myrtle, Phoebus has his bays,
Tea both excels, which she vouchsafes to praise.

—Edmund Waller, 1662, the first known English poem praising tea

Tea drinking at the Palace meant that tea would be drunk at the manors and estates. Still, coffee held on. Perhaps tea was more easily domesticated, was more easily a family beverage than coffee. Young human beings are deficient in the enzyme that metabolizes caffeine, and the stronger effects of coffee would thus be further magnified in the young. Morning tea along with a copy of The Spectator became an ideal of the "well-regulated household" as early as 1711.

But the coffeehouse still reigned as the center of intellectual (and business) activity. Addison, like Dryden and like Swift, even had mail delivered to his regular coffeehouse. Unlike them, he drank tea. The coffeehouses were not chauvinistic. Alexander Pope drank coffee. Charles de Quincey drank tea.

But the type for the tea-shaman was Samuel Johnson. Johnson liked to drink a cup of tea before he rose, and he liked to continue drinking tea throughout the day and evening and into the night, postponing the dreaded, if inevitable, hour of retirement as long as he could. Johnson hated being alone, especially at night. He said he could only bear solitude if he were reading or writing. Tea, so ever sociable, was his perfect drug. He'd drink a dozen cups at an evening gathering, and urge another pot from the hostess when he sensed the late hours creeping upon the other guests and threatening to bring the conversations to an end.

> *A hardened and shameless tea-drinker, who has for many years diluted his meals with only the infusion of this fascinating plant; whose kettle has scarcely time to cool; who with tea amuses the evening, with tea solaces the midnight, and with tea welcomes the morning.*
>
> *—Samuel Johnson, on himself*

Johnson was more like Ho Tai than Lao Tzu, though he dispensed vinegar rather than candies. Still, a widely disparate collection of artists, poets, and intellectuals liked him, or expressed admiration and respect if liking were out of the question for reasons of ideology. He lived simply and he was generous with what he had. He was said to be able to converse with charm and wit upon any subject, be it books, tea, gardening, social customs, or cats, that a hostess might bring up. Perhaps excepting children.

> *He had scant patience with people who would neither "lend dignity to falsehood, nor be content with truth."*
>
> *—Agnes Repplier, To Think of Tea*

He drank tea and tea and tea. He wrote what is probably the world's only readable dictionary.

> *So hear it then, my Rennie dear,*
> *Nor hear it with a frown,*
> *You cannot make the tea so fast*
> *As I can gulp it down.*
>
> *—Samuel Johnson*

Poesis

Methods of brewing tea vary according to culture, the type of tea being brewed, individual taste, and prejudice. Initiates can be extremely fussy, so the art is best learned from them directly.

That said, I do want to assert that green tea is best brewed with water that is not quite boiling, and that the first infusion should steep only a couple of minutes. The second and third infusions, and any thereafter, should steep no more than twenty or thirty seconds, not much longer than it takes to bring the teapot back to the table. Drink it from a bowl.

The leaves and any tepid leftover tea will wait patiently in the pot all day, to be revived by fresh hot water.

Don't try that with black tea.

History

The English drink tea with milk, Mongolian style. Perhaps the custom was passed through the Manchu leaders in China at the time of European contact in Canton. Or perhaps the English just came to it by themselves. The way they came to sugar.

A Brief Meander through Sugar

English sugar consumption began rising exponentially in the last half of the seventeenth century. Through the eighteenth century sugar consumption doubled every ten years. The curve of English sugar consumption matches closely that of English tea consumption. If we add chocolate consumption in with that of tea, well more than half of all the sugar consumed is accounted for.

Why they drank their tea this way is not clear—no one in China or Japan sweetened their tea. Perhaps it was for the extra energy rush, a "kicker" for the caffeine. Perhaps, following the poison path equation "either hydrocarbons or carbohydrates," sugar intake related to the growing English temperance movement, or to their lack of grapevines. Maybe the phenomenon is related to Protestantism, a need for something sweet to lighten the weight of moral severity, or to replace the sweetness of the Mass. Undoubtedly, many karmic links were involved, known and unknown, but the result is clear: the sweetening of tea plundered Africa, as the tea trade would eventually plunder China. The sugar trade established slavery on a scale unknown since the fall of Rome. It changed the New World forever, creating a social experiment of such far-reaching historical potential that its outcome is far from clear. Along the way, sweet tea created the United States.

A MAD TEA PARTY,
BLANCHE MCMANUS, 1896

Sugar cane (*Saccharum officinarum*) is native to Polynesia. A seafaring plant, it had washed up on the shores of China and India and had established itself at least before 1000 BCE, when it is first attested. Sugar was first refined in India around 700 BCE in the Ganges valley, and spread from there into China and to points west, arriving in the Mediterranean in the Middle Ages. By the mid-seventeenth century, during the Mercantile Era, almost all of Europe's sugar came from the Caribbean, where the plant had first been introduced by Columbus. The first plantations were on Barbados, followed by Jamaica, Cuba, and later other islands. The Spanish controlled the area first. The Dutch and the French arrived next, but it was the English who eventually managed to become the dominant colonial power. By that time most of the once extensive indigenous Caribbean population had already died out (in slavery) or been exterminated. The few surviving Caribs the English did find they forcibly shipped to the Miskito coast of Nicaragua. All of the labor for the extremely labor-intensive production of sugar was captured in Africa.

Between 1680 and 1807, when the British abolished slave trading, several hundred ships were at sea on one or another leg of the "Triangular Trade" on any given day. Ships left England with firearms, beads, and salt, and traded them for slaves in West Africa. Packed with chained captives, the ships made the "middle passage" to the West Indies. The surviving captives were sold as slaves, the ship washed and refitted, and then loaded with sugar, molasses, and rum for England.

The number of slaves needed to produce sugar (the ratio of slaves to product) was always ten times that of cotton or tobacco. Life expectancy for slaves working sugar plantations was one-half that of a cotton slave. The cost of a slave was about that of a ton of sugar, and a slave, on average, produced about a tenth of a ton of sugar per year. Henry Hobhouse, in *Seeds of Change,* estimates that each teaspoon of sugar represented six days of a slave's life.

The English public was not completely silent about the slave trade—there was an organized opposition and certain firms advertised and sold "non-slave" sugar. Though estimates vary on the total number of slaves taken from Africa, three-quarters of them, some fifteen of the total twenty million, were bought for sugar. Nearly half of that sugar dissolved in tea.

A MAD TEA PARTY, HARRY ROUNTREE, 1928

The Ally

> *"Take some more tea," the March Hare said to Alice very earnestly.*

History

American ships were much less involved in the Triangular Trade, at least until the British got out—slaves bound for southern plantations were often purchased in the Indies. American ships come into the story in a different way.

The Navigation Acts prohibited American ships from trading in anything but British goods, except for American goods bound for England. New England traders responded by smuggling. The smugglers bought the sugar and molasses needed by the New England rum distilleries in the West Indies from the French. They bought tea from the Dutch. The English had taxed tea to where the duties amounted to half of its price, in England as well as in the Colonies. The high tax created a huge tea smuggling industry in England, which was hurting the East India Company. One-third of all the tea entering England was smuggled, and as a consequence the East India Company was left with a tea surplus. The government decided to help them out by letting them sell the tea directly to the Colonies, with only a small fraction of the previous duty-tax. The tax, however, would not be a British tax but a tax on the Colonists, and the tea sales would be an East India monopoly. The British hoped that by offering the Colonists cheap tea, the Colonists would accept the tax. This, as we know, did not occur.

Many Colonists were willing to go along with the new Act—after all, they would get to buy tea at about half the price it would cost in England—but the traders in the northeast were almost unanimously against it, particularly the smugglers (such as John Hancock). The cheap tea, for one, would hurt their profit margin. But more, the nature of the tax and the way it would be collected would make their whole business exceedingly difficult, if not impossible—all of the tea importing infrastructure would be in the hands of the East India Company. Sugar and rum might follow. Bostonians wearing blankets, feathers, and face paint threw the tea into the harbor, and similar protests occurred at five other ports. The Crown decided to up the ante by closing the port of Boston with military force, a mistake that cost them their colonies.

> *But the incipient Americans did not fight a war and die for a few wealthy tea smugglers—the Revolution was about* Common Sense.

Times for Drinking Tea

In idle moments
When bored with poetry
Thoughts confused
Beating time to songs
When the music stops
Living in seclusion
Enjoying scholarly pastimes
Conversing late at night
Studying on a sunny day
In the bridal chamber
Detaining favored guests
Playing host to scholars or pretty girls
Visiting friends returned from far away
In perfect weather
When skies are overcast
Watching boats glide past on the canal
Midst trees and bamboos
When flowers bud and birds chatter
On hot days by a lotus pond
Burning incense in the courtyard
After tipsy guests have left
When the youngsters have gone out
On visits to secluded temples
When viewing springs and scenic rocks

—Ming dynasty tea manual, quoted in Blofeld

On the Flower *Sacrific*

The ancient Masters extended the Way of Tea to all things. They recognized that in cutting flowers to place in the tea room they were involved in ritual sacrifice. The Flower Master knew that with his scissors and his knife, with his wires, his twisting and bending, with his salt and alum and vinegar, that he was the chief torturer, and the executioner.

BRAND
JAPAN TEA

TEABOX, OCCUPIED JAPAN

He knew that for a butcher, a pious sense of guilt, or perhaps Debt, was seemly. Thus he washed the leaves with a fine rabbit hair brush. Thus obeisance was made to the flower arrangement even before greeting the host. Thus he tried not to waste. Thus faded flowers were taken to a river to be cast away, or else they were buried. And thus sometimes he would erect a monument.

> *Emperor Huensung, of the T'ang dynasty, hung tiny golden bells on the branches in his garden to keep off the birds. He it was who went off in the springtime with his court musicians to gladden the flowers with soft music.*
>
> *—Okakura Kakuzo*

The Ally *So what plant are you going to play to with that harmonica?*

Wormwood.

Signatures

Heavenly Pillar
One Leaf
Cloud-Mist
Left-by-the-Birds
Backbone Cliff
Fairy Cliff
Jade Spiral Springtime
Monkey Tea

—Chinese teas rare to the point of legend

The Ally *The head server pours the tea offering into a tiny cup and places it on a tray. Hold the tray at about eye level and approach the altar along the center aisle. Bow to the Buddha, step to the right, and place the offering on the altar. Bow again, and then make a full prostration, followed by a gassho. Exit along the right aisle. Join the other servers and bring the tea in together, holding the teapots at eye level with both hands. The servers should all bow together after entering the zendo, and then serve the tea.*

There was one particularly fine and subtle tea cultivated in the Zen temples. The masters sought to pass it through time by compressing it into a "koan," something like a smooth jade disk to be placed in the mouth and kept on the tongue day and night. When the tea is at last ready, it is said, the disk dissolves, and the True Identity of the tea is revealed—

Cloud Tea, or maybe Iron Ox Tea,
or Fragrant Grasses Tea, or Oak Tree Tea

each with a particular flavor that suffuses the body and tingles in the blood.

Chao-chou's tea. Lin-chi's tea.

Cat-lying-in-front-of-the-stove tea.
Winter storms.

Seventy years of Zen—
I got nowhere at all
I shed my black robe
Became a shaggy crank.
I have no business with
The sacred or profane,
Selling tea is all I do—
It holds starvation off.

—Baisaō, tr. by Norman Waddell, in The Roaring Stream,
ed. by Nelson Foster and Jack Shoemaker

THEOBROMA CACAO

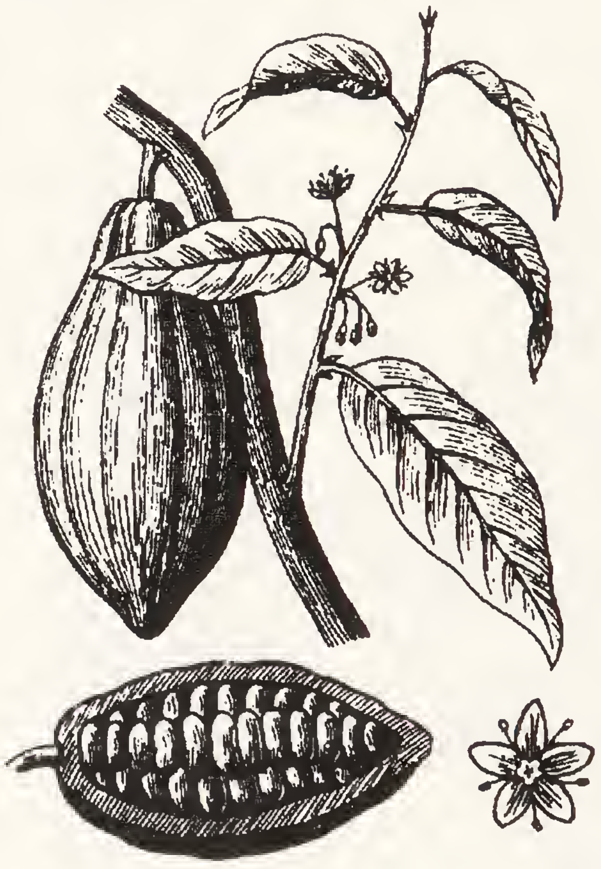
Common names Chocolate, cocoa. The "Food of the Gods."

Related species Nothing else quite like it.

Taxonomy The Sterculiaceae is a family of soft-wooded small trees and shrubs, predominately tropical, with alternate leaves and usually distinguished by stellate pubescence (star-shaped hairs) covering the leaves and inflorescence. The family contains the genus *Theobroma*, of which the cacao tree is one of twenty-two (or fifty, depending on the taxonomist) species. Sterculiaceae also contains the economically important genus *Cola*—the kola tree, *Cola nitida,* is among its 125 African species—and the large genus *Sterculia,* named for the Roman god of privies. (For those brought up in the city, a "privy" refers to an outbuilding "fifty feet too far away in the winter and fifty feet too close in the summer." The name is derived from the smell of the flowers of certain of the species.)

In California, the Sterculiaceae is represented by the beautiful *Fremontia,* or flannel bush, with its spectacular deep golden flowers.

Two species of *Theobroma* are cultivated, *Theobroma cacao,* the source of chocolate, and *Theobroma bicolor,* from which a beverage called *pinolillo* is prepared in Nicaragua from the pulp of the seed pod (not the beans). The drink is called *pataxte,* "big pumpkin seed," in Nahuatl, a name also used for *Theobroma bicolor* generally.



STRASSLE,
NATURGESCHICHTE,
1885

Theobroma cacao occurs as two cultivars: variety *criollo,* which was the source of the cacao drunk in Mesoamerica, and *forastero,* a hardier but less tasty variety found in the northern and western Amazon basin. *Theobroma cacao* only flowers within twenty degrees of latitude north or south of the Equator.

Until recently, no one was sure that there were any truly wild populations of *Theobroma cacao,* but Allen Young has established that truly wild populations exist in the upper Amazon, and Jose Cuatrecasas believes that wild populations exist in Guatemala and in Chiapas among the Lacandon. These populations may have once been connected and continuous, before becoming separated in the Quaternary. Others believe that *Theobroma cacao* is of fairly recent origin, perhaps created by early people in the Amazon ten to fifteen thousand years ago by crossing two wild species such as *T. pentagona* and *T. leiocarpa.*

In the Amazon, cacao was used mostly, if not entirely, for the pulp. But it is unclear whether the *criollo* cacao evolved in the Amazon basin or in Central America. Anthropologist and food historian Sophie Coe, in her fine *True History of Chocolate,* believes the *criollo* variety was indigenous to the low plains of southern Mexico and Guatemala, the center of the cacao bean culture. There is no evidence that cacao was cultivated in South America before the Conquest. Allen Young, in *The Chocolate Tree,* nonetheless believes that both varieties evolved in South America. While the seeds of *Theobroma cacao* remain viable for only a few weeks, the tree could have been spread to Mesoamerica by sea traders around 1500 BCE as ripe pods, or even as seedlings.

Part Used The processed seeds, though as below, the sweet pulp is a nutritious (and fermentable) foodstuff.

The Plant *Theobroma cacao* evolved as an understory tree. The large coconut-sized seed pods grow directly out of the trunk and the main branches from merisematic cushions, a process called *cauliflory.* Cacao is a difficult tree to grow, being subject to diseases and generally finicky in its demands for constant temperature and humidity. The flowers are fertilized by tiny midges, and well-manicured plantations have notoriously low yields. Some of Allen Young's research was aimed at determining the importance of the natural setting of the tree, especially the decomposing ground litter of the upper canopy, as the breeding ground for the midges. Thus the ancient Mesoamerican farmers likely enjoyed much more fruitful yields from their trees than do many modern large-scale plantations.

The large seed pods contain a sweet white pulp, and this was probably the first human interest in the tree. If so, then sweetness was linked to cacao in its earliest use, a subject we will return to with the subsequent post-Conquest practice of sweetening cocoa with sugar.

The use of the seeds of the pods developed about three thousand years ago among the Olmec on the Gulf Coast of Mexico. In their raw form, the seeds are extremely bitter. The complicated techniques of curing the seeds into an ingestible form have changed very little, down to the present time, the single modern innovation being Van Houten's defatting process for making cocoa. (We'll use *cacao* to refer to the tree or the seeds of the pods, *cocoa* to refer to the dry powder used to make drinking chocolate, and *chocolate* to refer to any chocolate drink, or to the familiar comestible product in cakes or bars.)

Several operations are required to make chocolate from the beans, and it is a tribute to the skill of the Olmec agriculturists that they perfected such a multistage operation. First the pods have to be carefully cut from the trees in a way that does not damage the cushion. Then the pods are opened and the beans and pulp scraped out. The first stage in processing the pulp is fermentation. This takes several days (one to three days for *criollo* and three to five days for *forastero,* though pre-Columbian chocolate was exclusively *criollo*). During fermentation the pulp heats up to between 113 and 122 degrees Fahrenheit (45–50°C). Chemical and enzymatic reactions take place that liquefy the pulp and cause the seeds to germinate. The germination of the seeds is essential to create a cocoa flavor. The high temperature is maintained for several days after the seeds germinate, eventually killing them and reducing their astringency. A second fermentation, an aerobic fermentation, takes place after the first anaerobic fermentation completes. The piles of seed pulp must be turned several times for the fermentation to proceed correctly.

After both fermentations are complete the beans are easily removed from the liquefied pulp and are then dried on mats or in baskets in the sun. Drying usually takes several weeks, and enzymatic activity continues, further developing the flavor and aroma characteristic of cocoa. After drying, the seeds are roasted, catalyzing further chemical reactions and turning the "nibs," the beans, to a rich brown color. After roasting, the nibs are winnowed: the loosened husks are separated from the kernels.

The resulting product we will henceforth call cocoa beans: the source of chocolate, the stuff of myth, and a coveted item of ancient commerce.

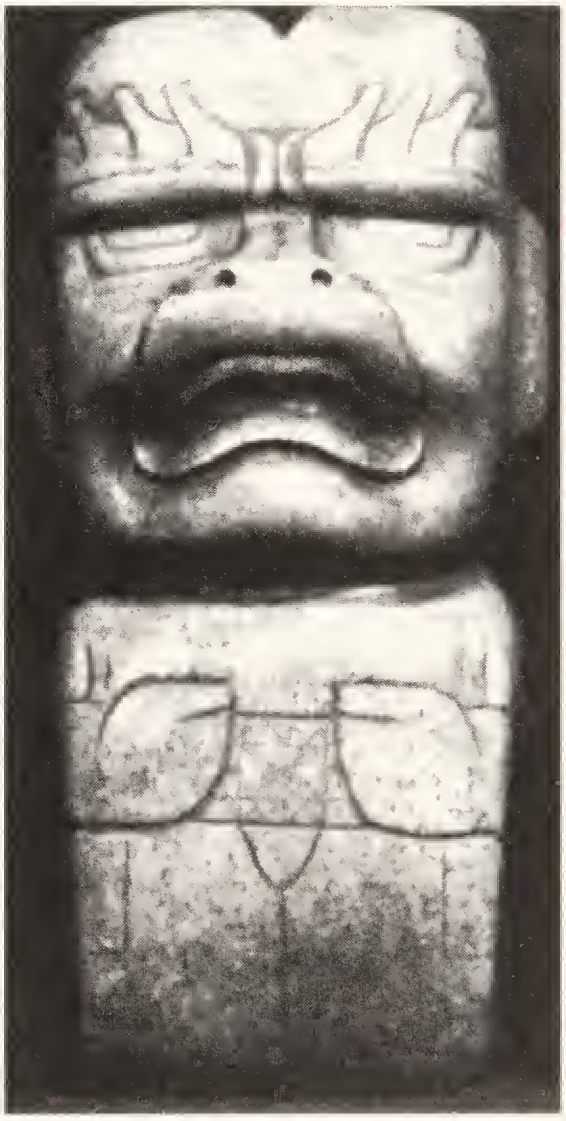
All alone I sing
to the one who is my Lord:
in this place where the gods command,
the flower-chocolate drink is foaming—
the flower-intoxication.

I yearn, oh yes!
for my heart has tasted it:
it intoxicated my heart—
songs, dreams, yearnings.
My heart
has tasted it.

—Tlaltecatzin, p. 240

How Taken

As cocoa, in a golden chalice, or in pottery goblets; as chocolate, in bars or chunks, in coatings for confections, in cakes, brownies, fudge, frosting, and ice cream. As cocoa butter on the skin.



CEREMONIAL OLMEC AXE

Chocolate goes well with coffee, and with several distilled beverages, such as cognac, or Tennessee whiskey.

To my knowledge it is not yet smoked or injected.

Effects A stimulating tonic for the body and a soothing balm for the soul.

Chemistry, Pharmacology Chocolate contains xanthine alkaloids, as do coffee and tea. Chocolate contains caffeine, but in small amounts. A cup of cocoa usually contains about four or five milligrams of caffeine, about one-twentieth that of a cup of coffee. But chocolate contains somewhat larger amounts of theobromine, 1,7-dimethylxanthine. While hot chocolate contains only one to eight milligrams of caffeine, it contains forty to eighty milligrams of theobromine. A chocolate bar, at least the good ones, may contain twice to four or five times these quantities of alkaloids.

The exposed nitrogen atom on the theobromine molecule (covered by a methyl group in caffeine) creates differences in both the level and the nature of the physiological activities of the two sister molecules. Theobromine has only about one-fourth the power of caffeine as a "stimulant" (central nervous system stimulation), but is more powerful than caffeine as a smooth muscle relaxant and vasodilator. Theobromine is much more potent than caffeine in relaxing bronchial muscles, and thus in relieving spasms, such as asthma. Theobromine is more active than caffeine as a cardiac stimulant, and chocolate should not be given to dogs for this reason, dogs evidently being especially sensitive to this alkaloid. Like caffeine, theobromine is a diuretic.

Theobromine is far less potent than caffeine in increasing serum corticosterone levels, perhaps related to its lower solubility. Theobromine's binding power on adenosine receptors is less than one-third that of caffeine.

In addition to xanthine alkaloids, chocolate also contains phenethylamine, the backbone molecule common to catecholamine neurotransmitters such as norepinephrine, dopamine, and epinephrine (adrenaline). Phenethylamine is also the backbone of such drugs as mescaline, amphetamine, ephedrine, and several hundred other potent compounds created or investigated by Dr. Alexander Shulgin (see PIHKAL), including DOM ("STP"), TMA, MDA, MMDA, MDMA, and 2CB. It has long been suggested that phenethylamine might be responsible for the soothing mood-effects of chocolate. Since chocolate was a favorite of those suffering from love-sickness, it seemed possible that both withdrawal pangs and the phenethylamine in chocolate might be involved with dopamine levels in the brain.

Dr. Shulgin investigated this possibility by ingesting large amounts of pure phenethylamine. He found that the body is so effective in breaking down phenethylamine that he felt no effects even from consuming more than a gram and a half of pure phenethylamine, a good spoonful.

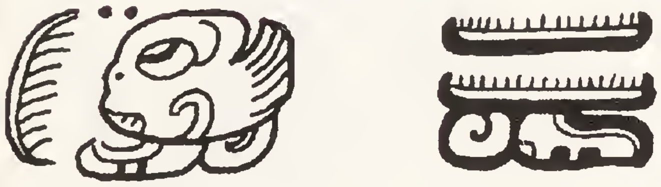
But science never stands still. Recently, anandamide has been discovered in chocolate. Anandamide is the endogenous ligand, the neurotransmitter in the brain that binds to the THC receptor, which is the receptor to which the tetrahydrocannabinol in marijuana binds. In addition, chocolate contains two related compounds, in greater quantities, that inhibit the natural degradation of anandamide in the body. While this research is quite new, it is possible that chocolate contributes to a buildup of the body's own anandamide as well as contributing a little extra itself.

The fats in chocolate also trigger dopamine-based pleasure circuits. Nalaxone interrupts the sweet and fat cravings of chocoholics.

Other recent research, some of it by the Belgians, has found that some of the same phenolic antioxidants found in red wine that are thought responsible for wine's demonstrated effectiveness in combating heart disease are also found in chocolate in significant quantities—a cup of hot chocolate being about equal to three-fourths of a glass of red wine, and some dark chocolates containing twice the flavonoids as a glass of wine. A study at the University of California at Davis found that epicatechin levels in the blood rose exponentially for six hours after subjects consumed semisweet chocolate. Antioxidant acitvity also rose, notably reducing the oxidation of low density lipoproteins (the "bad" cholesterol) (Tarkin, 2000).

History

Sophie Coe, who scrutinized the available evidence as thoroughly as anyone, believed that *Theobroma cacao* was first cultivated by the Olmecs, sometime between 1500 and 1000 BCE. The Olmecs lived along the Mexican Gulf Coast, in southern Veracruz and Tabasco. We know little about them apart from the colossal heads that they carved in stone. On the basis of historical linguistics it is thought they spoke a proto-Mixe-Zoquean. Languages of this family are still spoken by peasant farmers of the area. It is from the Olmecs that we received the word *cacao.*

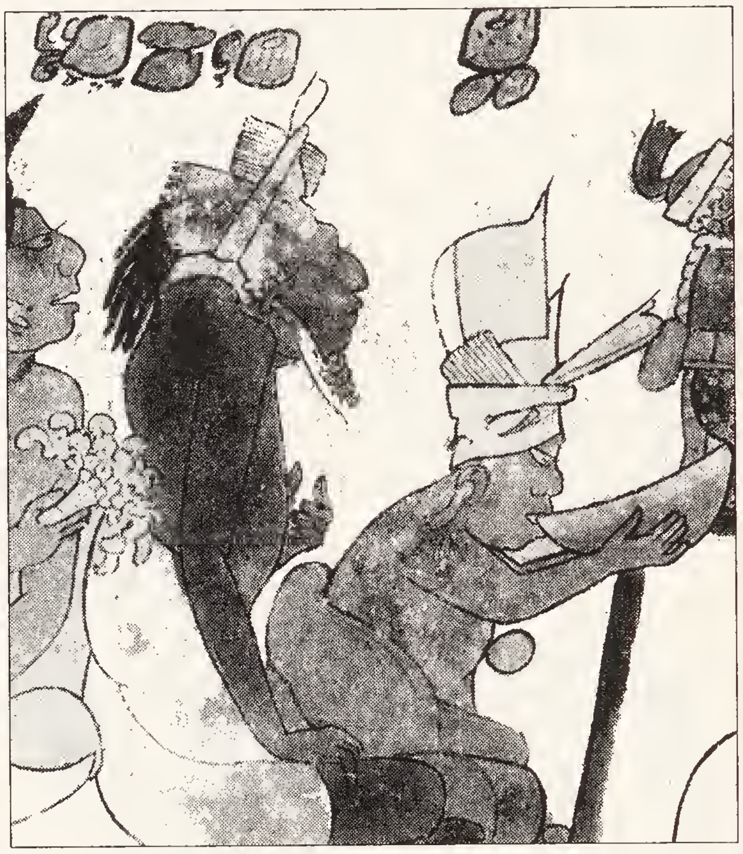


CLASSIC AND POSTCLASSIC MAYAN CACAO GLYPHS

It was also the Olmecs who discovered the secret of treating maize corn with lime, a process called *nixitamalization* that releases the amino acids in the kernels. Europeans ignored the Aztec doctors for several centuries, and poor people in southern Europe who had come to depend upon maize as a staple food often suffered from pellagra, a painful and debilitating disease wholly curable with B vitamins. Coe believes that the nixitamalization of corn provided the energy base that supported the rise and growth of Mesoamerican civilization.

Olmec culture and civilization faded from history around 400 BCE, for reasons still uncertain. Sometime around 100 CE the Maya began arriving in the old Olmec territory, coming north from present-day Guatemala. On the Pacific coastal plain of Chiapas, they met descendants of the Olmecs at Izapa. *Cacao* entered Mayan as a loan word, and cacao cultivation was adopted into Mayan culture.

The Classic Maya culture flourished from around 250 to 900 CE. We know that cacao was drunk at least by the aristocracy and that it became an important part of their mythology. Tall cylindrical jars containing different cacao beverages were buried with Mayan nobility. On a Late Classic pottery vase there is a painting of a woman pouring the contents of one jar into another jar at her feet: this is the first depiction of the preparation of the foaming chocolate—a technique witnessed by the Spaniards in Tenochtitlan eight hundred years later. In many Maya inscriptions the glyph for *cacao* (pronounced "ka-ka'w," as it still is), is preceded by various modifiers, including "chili" cacao, "fruity" cacao, and a number that have resisted translation. It seems clear that there were a number of different preparations of cacao, with a variety of other plants being used as admixtures, each with distinctive effects.



KEEPERS OF HOLY BOOKS

The Maya were traders, and ceramics and obsidian unburied in the Classic Maya city of Balberta in Guatemala show that they traded at least as far north as Teotihuacan. For these exotic manufactured goods the Maya undoubtedly traded cacao beans, as their descendants and relatives continued to do at least until their trading networks were taken over by the Spanish. Classic Maya civilization collapsed around 850 CE. The great cities were abandoned, to be reclaimed, finally, by the forest. The cause of the collapse appears to be ecological: deforestation and overpopulation. The people all moved away: north to the Yucatan or southwest to the Guatemalan highlands—a strange image to visualize, but evidently true.

Leaving behind the palaces and the rich temples,
the marketplaces and the houses,
the shops selling musical instruments,
the libraries of painted books,
the observatories
where they charted Venus and predicted eclipses,
the corridors and murals,
the cacao plantations.

The Collapse was not universal. Several younger cities to the east were still vibrant with food and resources. The Chontal Maya who occupied the wet lowlands of eastern Tabasco grew rich through the cacao trade. Large dugout canoes carried cargoes north and south, clear around the Yucatan peninsula down to Honduras. They established the city of Cacaxtla in Tlaxcala, commanding the trade routes into the Valley of Mexico. Mayan gods were painted in murals, especially Ek Chuah, the God of Merchants, with his backpack and cacao tree.

Around the year 1000 CE Cacaxtla was conquered by the Toltecs.

The Toltecs expanded their realm of influence as far as and into the Yucatan. Undoubtedly they used their military strength to get good deals on chocolate, but the Maya probably remained the traders. The Maya had the trading networks, and they had the recipes for the many differing cacao preparations. As the Toltecs declined, a new people, the *Mexica,* or *Aztecs,* began to gain power in the Valley of Mexico. As the Aztecs established their Empire, the Maya were ready with cacao beans to trade with them.

Signatures

> *American chocolate is coarse—they skimp on grinding. My favorite is Belgian chocolate, the 77% kind. It's business-like and to-the-point. The Dutch can do about as well as the Belgians, when they put their minds to it. German chocolate can be good as long as they are copying the Dutch. Swiss chocolate is too precise—they confuse it with their watches. French chocolate is pretentious—all frills and package with no substance. English chocolate is clueless, they have to add fruit and nuts. Russian chocolate should come with a wick and a candelabrum.*

A Wee Bit on the Aztecs

The Mexica probably arrived in the Valley of Mexico from somewhere to the north sometime during the thirteenth century. According to their own mythology, of which they were proud, they had been barbarians—humble desert dwellers wearing rabbit skins. They had emerged from Chicomoztoc, the "Seven Caves," and after living among dangerous animals in the desert had settled at Aztlan, the "Place of Whiteness," a small island in the middle of a lake. Other tribes had emerged from the Seven Caves before the Aztecs, including perhaps the Toltecs and the Chichimecs. According to tradition, the Aztecs left Aztlan in the year 1111. From Aztlan, they followed the sacred medicine bundle of Huitzilopochtli, the "Hummingbird of the South," to Culhuacan, "Curved Mountain." The people of Culhuacan eventually kicked the newcomers out, and on the basis of an unfavorable omen, a broken tree, the tribe divided. One group continued south, calling themselves "Mexica," and eventually arrived in the Valley of Mexico.

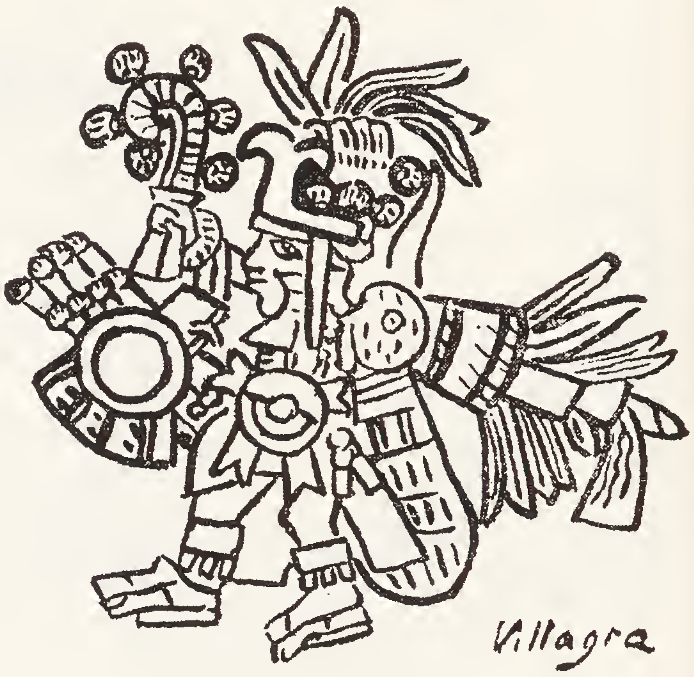
The Valley, of course, was already occupied by the descendants of the Toltecs along with other immigrant groups. There were many cities, each with distinctive traditions and tribal associations, and often involved in small wars with each other. Even in decadence, the Toltec culture was sophisticated, artistic, and learned. The Mexica settled for a while at Chapultepec, but they suffered a serious military defeat at the hands of the Tecpanecs late in the thirteenth century. (Chapultepec is famous for lost causes. During the U.S.-Mexican War, a group of young military cadets defended it to their death, some reportedly plunging to their doom wrapped in the Mexican flag; their sacrifice is observed in the annual celebration of the *niños heroes.*) The tribe again divided, and many bands scattered to seek refuge in surrounding cities. Many of these bands intermarried and were assimilated by their adopted cultures. The Mexica found protection in the city of Culhuacan (a different city from the Culhuacan of Aztec myth). The Mexicas were accepted there as workers and as mercenary warriors.

The inhabitants of Culhuacan claimed to be the descendants of the Toltecs. The Mexica made some attempts to marry into that revered lineage, but an altercation occurred. One story is that the king of Culhuacan had reluctantly given his daughter to be married to a Mexica prince. Perhaps roused by the snobbish ways of his intended's family, the prince killed her on the eve of the wedding, flayed her body, and appeared at the wedding wearing her skin.

they had . . . "attitude"

Culhuacan banished the whole tribe to a couple of islands in the middle of Lake Texcoco, the Lake of the Moon, probably hoping they would starve and disappear.

Such did not occur. Huitzilopochtli spoke and announced that the island was the promised land of their prophecies. The island and its lake setting recalled Aztlan, and there, in 1325, the Mexica established their base, Tenochtitlan. A dissident faction settled on a neighboring island, and named their city Tlatelolco.



A. VILLAGRA, HUITZILOPOCHTLI AND THE SERPENT OF FIRE

For several generations the Mexica lived quietly, building up their population by welcoming refugees from other parts of the Valley. The Mexica concentrated in developing crafts and trading more than agriculture, and it was the various foreign peoples the Mexica welcomed to their island that provided many of these skills. The jewelers and lapidary artists came from Xochimilco. An important guild, the manuscript painters, were descendants of a Mixtecan tribe, the Tlailotlaca. But most important for our story were the *pochteca,* the long-distance merchants. Sahagún dates their arrival in Tenochtitlan at around 1400. The *pochteca* were related ethnically to peoples on the Gulf Coast: the Chontal Maya, and perhaps to the Olmecs—the same traders who had served the Toltecs and Teotihuacan at Cacaxtla. Aztec society was highly stratified, but the *pochteca* were so highly valued that they were permitted many of the exemptions and privileges usually reserved for the Aztec aristocracy. Such as drinking chocolate.

The *pochteca* were considered honorary warriors, and they probably exaggerated the dangers of their long-distance trading journeys to maintain that image. While they had the right to wear cotton like the nobles, and feathers, they usually wore maguey like the commoners. They kept to themselves and tried to maintain a low profile. They hid their wealth by distributing it among extended families. They assuaged the jealousy of the warrior elite by inviting them to banquets and giving presents, but their privileged position always rested on royal favor and support from the highest strata of Aztec administration. The importance of the *pochteca* went far beyond simply supplying the palace with chocolate. Tenochtitlan was a city of craftsmen, and they were dependent on imports. The whole wealth of the city was based on the flow of raw materials across the causeways: cacao, feathers, precious stones, gold, cotton—any item of exotic beauty that could add to the prestige of the city—as well as foodstuffs.

And prestige was of paramount importance. If we accept the world as the playground, sometimes battlefield, of poisons, history becomes a story of shamanic alliance and conflict, a story of magic spells and their dissolution by new spells. We can say that all governments are in the business of enchantment, to keep the sacrificial victims from rising up and overthrowing those who sacrifice and eat them. Armed force is never absent, but even when most prominent certain logistical equations ensure its vulnerability. Along with terror, hegemony depends upon myth and sorcery. Tenochtitlan thus deserves our study.

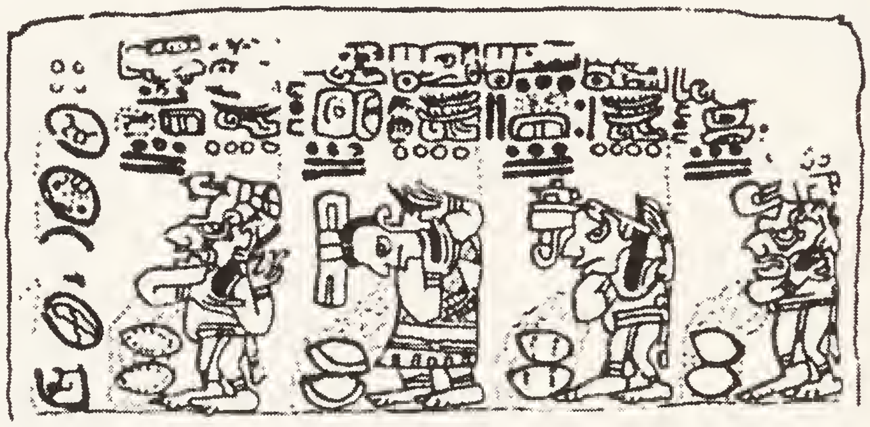
In 1430, during the reign of King Itzcóatl, the Mexica of Tenochtitlan faced a crisis. King Maxtla of Azcapotzalco, sensing the ambition of the Mexica, had doubled their tribute. The Mexica had responded by developing floating gardens to be able to raise enough food to pay off Azcapotzalco, but Maxtla was still not satisfied. The story goes that Itzcóatl, following the will of the people, was prepared to submit, to bring the statue of Huitzilopochtli to Axcapotzalco and to throw himself on the mercy of the king. A philosopher named Tlacaélel spoke and aroused the Mexica to resistance. The nobility made a deal with the commoners that if the war were unsuccessful, the nobles would become servants of the commoners, but if the war were successful, the commoners would recognize the right of the nobility to rule. The Mexica enlisted allies from other tribes and cities that had grudges against Azcapotzalco, and the war against the Tecpanecs was successful. Tlacaélel became Itzcóatl's chief advisor ("he did only what Tlacaélel advised him to do") and Tlacaélel remained the power behind the throne through the reigns of Moctezuma I, Axayácatl, Tizoc, and Ahuítzotl.

With the defeat of the Tecpanecs, Tlacaélel directed three important changes in Mexica society, and thereby created the Aztec state. He created a military aristocracy by granting titles of nobility to distinguished soldiers. This system gave commoners a means of upward mobility, measured by the number of captives a soldier had brought back to the city. Five captives seems to have been the threshold to admit a soldier to the Warrior class, with its attendant privileges. Second, Tlacaélel expropriated Tecpanec lands and divided them between the king, the nobility, the new warrior class, and the *calpullis,* the traditional kin-based guilds that functioned as the basic governing units of the various quarters and sections of the city. This gave everyone a stake in Tenochtitlan's military success, and during Tlacaélel's lifetime the Aztecs extended their empire throughout the Valley of

Mexico and beyond: west to the territory of the Tarascans, east to the Gulf Coast (except for Tlaxcala), and south to Oaxaca.

Lastly, and certainly an act of magic, Tlacaélel burned the books and scrolls that he could find in order to write a new history. In the new history Huitzilopochtli, the god of war, was made a supreme deity, elevated to the rank of the Fifth Sun, the present age. As a consequence the Aztecs became the "chosen people," the People of the Sun who had the historical and cosmic responsibility of ensuring that the Fifth Sun not come to an end—that the sun continue to rise.

Historians differ as to how much importance any individual magician has in history, and Tlacaélel's case is no exception. Many ascribe to Tlacaélel the Aztec equation of blood and sun: that the energy of the human heart and the energy of the sun were one, and that this energy could be transferred through sacrifice. It was certainly under Tlacaélel's tenure that the sacrifice of prisoners of war began in earnest. And it was Tlacaélel's idea to maintain a state of constant warfare with several distant cities—not too distant, but not so near as to be kinfolk—to procure sacrificial victims. This was the "flower war," *xochiyaoyotl,* that Tlacaélel specified must not be fought to destroy or subdue the enemy city, nor to gain land or wealth, but purely to acquire captives for sacrifice. Tlacaélel restructured the priesthood. He also founded Tenochtitlan's great botanical garden.



MAYA GODS SHEDDING BLOOD OVER CACAO

Human sacrifice had a long history in Mesoamerica, as it does in many parts of the world. The Maya sacrificed captives, often after torturing them, and war captives were tortured in many places in North America. There is some evidence of sacrifice in Teotihuacan, and even among the Toltecs, in spite of their supposed official opposition to the practice. Among the Maya, human sacrifice is associated with kingship, especially with the ascension of a new king. But nowhere else did human sacrifice attain the pervasive scale that it did in Tenochtitlan.

Maya sacrifice was always accompanied with shamanic blood-letting. A queen would pierce her tongue diagonally with a stingray spine, and then pull a length of twisted string through the hole, allowing the blood to flow down the string. A king did the same with his penis. The blood was collected on paper and burned. The Visionary Serpent emerged from the smoke, and the visions that came from his mouth were recorded and interpreted. The Aztecs practiced bloodletting, generally by piercing earlobes, but they seem not to have practiced the visionary divination from burning blood. In fact, there seems to have been some fear of the Serpent.

If we distinguish shamanism from priestcraft, shamanism being direct intercourse with spiritual energies through some form of trance, then shamanism in Aztec sacrifice is most notable by its absence. Aztec sacrifice was ideology. We read of four great lines leading from the pyramid of Huitzilopochtli, each line three miles long; of teams of priests working round the clock, in shifts, cutting out the hearts of the victims. It is this mechanical, factory-like quality that evokes images of the Camps, of the Holocaust.

We search for magical correspondences between these two regimes, and, at best, come up with only a few pointers for further study: a tribal/racial destiny to save the world, a pervasive insecurity, a mythologized history coupled to an apocalyptic millenarianism, and perhaps coercive and corporeal child-rearing practices. Both cultures were marked by a pervasive militarism, and it is worth noting that among the Maya sacrifice only became common in the classic period, along with militarism and warfare. Unlike the Nazis, however, Aztec ideology never developed the myth of a Dark Conspiracy, nor were they concerned with ideas of racial purity (Though they certainly looked upon many of their neighboring tribes, such as the Huaxtecs, as barbarians.) Nazism, despite its elaborate (and mythic) ceremonials, remained secular. For the Aztecs the battle of dualism was in the hands of the gods.

Not that Aztec sacrifice did not have wholly secular, political considerations. Sacrifice was an instrument of state terror. The Aztecs were always worried about uprisings—revolts in other cities and disturbances within Tenochtitlan were not uncommon. Perhaps the nearly everyday presence of state sacrifices, the constant presence of the victims, the dances, the ceremonies, and then the feasts following the distribution of the bodies, served to evoke an image of collective unity.

Chiefs and officials of neighboring cities, friendly and hostile, were invited to watch the sacrifices. After the heart had been removed, the body was hurled from the top of the pyramid, rolling and bouncing to the bottom where it was reclaimed by its owner, to be taken home to be flayed, butchered, and the meat distributed. Some anthropologists (S.F. Cook and Michael Harner) have expended meticulous arithmetic to argue that Aztec mass sacrifice had an ecological basis, limiting population (children, as well as slaves, were purchased for sacrifice), and providing needed protein to a civilization without any large domesticated mammals. (Other anthropologists have dismissed this theory, calculating with yet more arithmetic that the "added protein" would not have been significant.)

Sacrificial victims were often given weeks of special training and preparation, so that they could act their part appropriately: women were often expected to dance, men to fight, some to be beautifully dressed as incarnations of a god and to bless people. This process of depersonalization could last for months, the captives being alternately praised and degraded, paraded and then again locked in a cage. However honored the role of the victim, we have no record that anyone ever volunteered for it.

A sacrificial victim who began to falter during the ceremonies was sometimes given a drink of *itxpacalatl,* "water from the washing of obsidian blades," in some chocolate. (Other times they were just dragged to the stone by the hair).

It is quite possible, even probable, that the drink contained an herbal admixture, and that "blade washings" refers more to its ceremonial function than its contents. Juan de Torquemada said that the drink left the victim "blazing with spirit and courage." It has been suggested that the admixture was some species of *Psilocybe.* Others have suggested that *itxpacalatl* contained *Tagetes lucida,* which is mentioned in other contexts as being used to calm fidgety sacrificial victims. Diego de Durán describes the effect of the *itxpacalatl* as causing the victim to become almost unconscious and to forget what he had been told (that is, that he was going to be sacrificed). My own guess is that *itxpacalatl* contained *Datura,* which has a long history of being used to stupefy intended victims. Mohammed Mrabet tells such a story in *M'Hashish,* translated by Paul Bowles.

Perhaps there are two layers of magic in operation here, seamlessly interwoven: the mechanical mass sacrifice of solar imperialism and an older earth-based ritual of dancing or blood-letting, albeit transfigured by the state religion. Not all of the sacrifices were performed on the great pyramid: there were many individual sacrifices performed in the local *calpullis,* or at least connected to local deities and ceremonies. The Aztec genius was to integrate the many differing gods and customs of its cosmopolitan population, what may have been dozens of distinct annual rituals, into a single ceremonial calendar.

What does all of this have to do with chocolate?

Yollotl-eztli, a Nahuatl *difrasismo* (conjoined word), literally "heart, blood," was a poetic term for chocolate. The cacao pod was a metaphor for the heart torn out in sacrifice.

> *This saying [Yollotl-eztli] was said of cacao, because it was precious; nowhere did it appear in times past. The common folk, the needy, did not drink it. Hence it was said: "The heart, the blood, are to be feared." And also it was said of it that it was like Datura, it was considered to be like the mushroom, for it made one drunk; it intoxicated one. If he who drank it were a common person, it was taken as a bad omen. In past times only the ruler drank it, or a great warrior, or a general.*
>
> *—Sahagún, (6)256*

The Plant Cacao beans were used as currency in the Aztec Empire and continued so in many part of rural Mexico for a century after the Conquest.

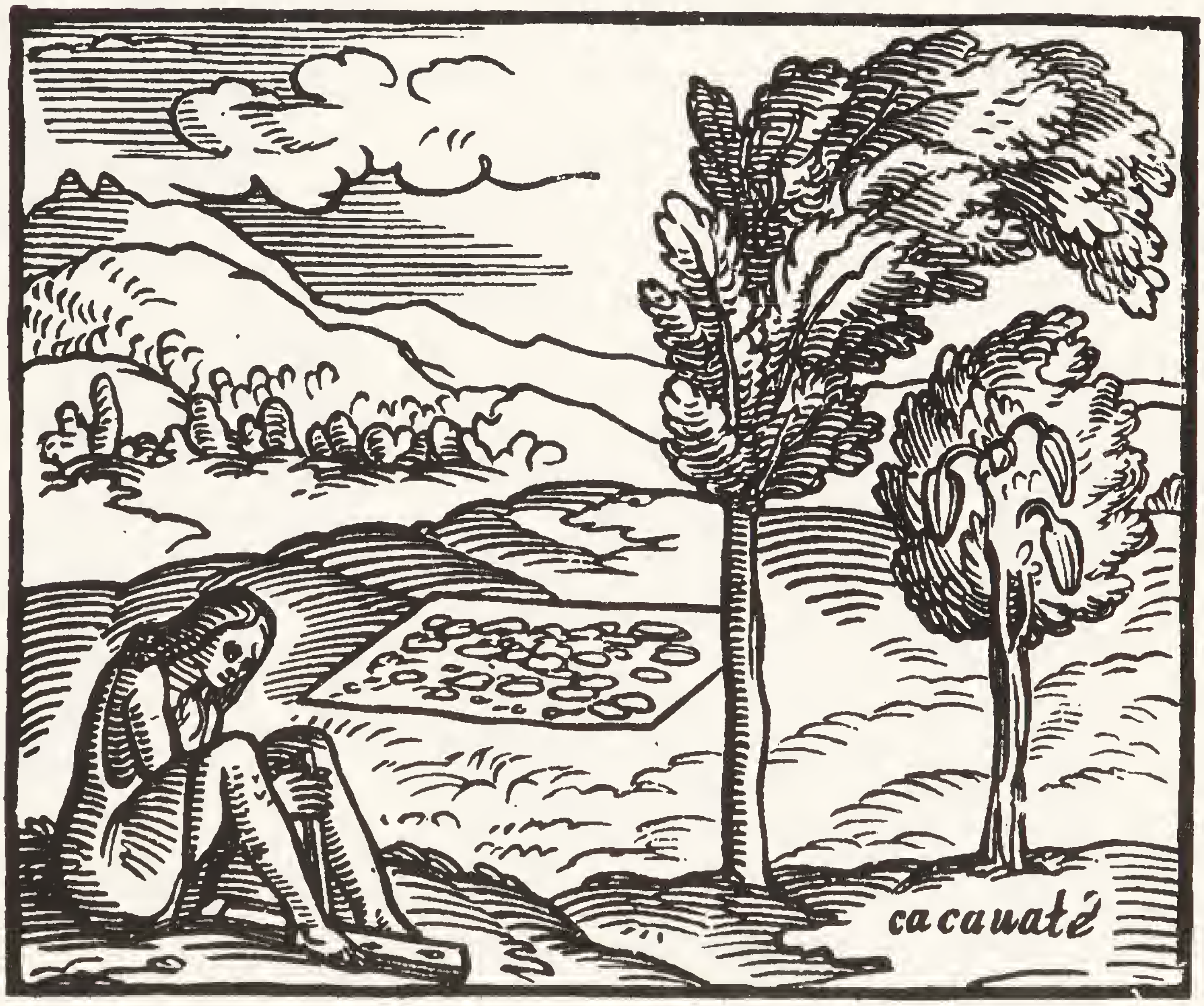
edible money . . .

Moctezuma's royal treasury vault was filled with bags of cacao seeds, not gold. Nezahualcoyotl's daily expenditure was said to be 32,000 beans. Nezahualcoyotl was the poet-king of Texcoco, a much smaller city than Tenochtitlan was to become, and the figure may be inflated by a factor of four. Still, that is a large budget. One porter could carry about 24,000 beans in a load. Bernal Diaz says more than 2000 containers of chocolate beverage were served daily to Moctezuma's palace guard.

days wage for porter:	*100 beans*
turkey cock:	*200 beans*
large hare:	*100 beans*
small rabbit:	*30 beans*
turkey egg:	*3 beans*
fish in maize husks:	*3 beans*
tamale:	*1 bean*

—based on Sophie and Michael Coe

Counterfeiters would make fake cacao beans out of amaranth dough, wax, and pieces of avocado pits. Ceramic cacao beans uncovered in Western Mexico fooled archaeologists for some years.

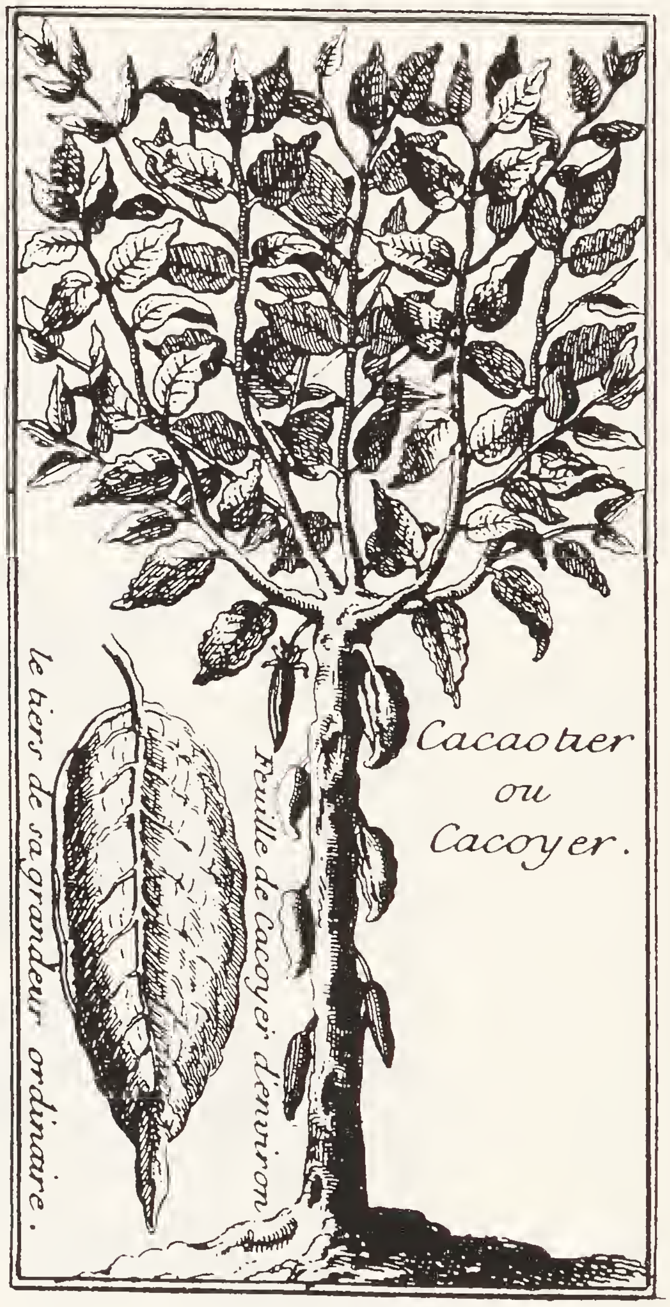


BENZONI, CACAO TREE, HISTORIA DEL MONDE NUOVA, 1565

Chocolate was reserved for the nobility, the veteran warriors, and, of course, the *pochteca,* who seemed to drink a lot of it. Commoners got chocolate when serving on *calpulli* work service in the palace, or when serving as soldiers on a campaign—cacao being a regular part of army rations. It does not appear that the priests drank *cacahuatl.*

In fact, conservative Mexicas had equivocal feelings about chocolate, as they seemed to have had for psychoactive plants generally. Moctezuma I once sent sixty shamans on an expedition to find Aztlan, the northern lake where the Mexica began their journey to greatness. The sorcerers found the lake, and asked to see the goddess Coatlicue, the "Serpent Skirt," or, if she were dead, her successor, as they brought news of her son, Huitzilopochtli. An old man led them up a hill on which the goddess resided. The climb exhausted the shamans, but the old man kept gaining strength. When the old man noticed that his visitors were lagging behind, he asked them what they had been eating. The sorcerers answered that they had been drinking chocolate. The old man told them that the chocolate was what was making them weak, that they should return to the pure, ascetic ways of their ancestors. The old crone at the top of the hill, Coatlicue, told them much the same thing: that their love of chocolate and luxury was spoiling their spirit.

Aztec civilization, with its stress on moderation and sobriety, its compulsory education, and the conscious use of myth to control the masses, has eerie parallels to Plato's utopia. Plato, of course, banned the poets, but surely, in Tenochtitlan, Tlacaélel was the type for the Philosopher-King, even if he ruled from behind the throne. In Nietzsche's terminology, they were an Apollonian culture.


Cacaotier
ou
Cacoyer.
Feuille de Cacoyer d'environ
le tiers de sa grandeur ordinaire.

JEAN-BAPTISTE LABAT, 18TH C.

How Taken

The Aztecs seem to have drunk chocolate cool. Otherwise, they prepared it as the Maya had before them. The cacao seeds, *cacahuatl,* were ground on a metate warmed by a small fire and made into a paste with water. More water was added, and the drink was foamed by pouring it back and forth between two jars. If other ingredients were to be added, the foam was carefully removed first, the admixtures stirred in, and then the foam replaced. Common additives were *nixtamalli,* masa harina, sapote (*Pouteria sapota*), and the seeds of the ceiba tree, *pochotl.* Such chocolate was said to be able to nourish a man for a day. Chocolate was spiced with chilies (*Capsicum spp.*), allspice (*Pimienta dioica*), and vanilla (*Vanilla planifolia*). At least some drinks were sweetened with honey.

The Plant

Hernandez lists four kinds of cacao seeds, of different sizes. The largest seeds were called *cuauhcacahuatl,* "wood cacao," followed by *mecacahuatl,* "maguey cacao," and *xochicacahuatl,* "flower cacao," said to have a reddish seed. The smallest seeds were called *tlalcacahuatl,* "earth cacao."

Signatures

green cacao,
honeyed chocolate,
flowered chocolate,
chocolate with green vanilla,
bright red chocolate,
huitztecolli-flower chocolate,
flower-colored chocolate,
black chocolate,
white chocolate.

—Sahagún: some chocolate drinks served to Moctezuma.

History

Chocolate was served at the end of the meal, with tobacco. According to Sophie Coe, Moctezuma's chocolate was never mixed with maize—such chocolate being considered common. We don't have recipes for all of the chocolates above, but the red chocolate probably contained achiote, *Bixa orellana.*

Francisco Hernandez mentions an aphrodisiacal chocolate that contained, among other ingredients, *Cymbopetalum penduliflorum,* in the Annonaceae. This large tree grows from the lowlands near Veracruz (where I've seen it), supposedly all the way to Oaxaca and Chiapas. It was a highly valued chocolate additive. Sahagún reports that taking it in excess leads to drunkenness, usually a reliable pointer to a plant worthy of study.

◆

Cymbopetalum penduliflorum in Nahuatl is *teonacaztli* (divine ear), or *xochinacaztli* (flowery ear). The aphrodisiacal drink also contained vanilla (*Tlilxochitl, "black flower"), and Piper sanctum, (Mecaxochitl,* "string flower"). The large leaves of the *Piper* plant contain safrole. They are very aromatic and today are used to wrap fish for cooking. I found the flavor imparted to the fish reminiscent of *Piper betle,* a much smaller leaf used to wrap betel nuts in southeast Asia and the Pacific.

Other admixture plants included the flowers of *olloxochitl* (heart flower), *Magnolia mexicana,* and *eloxochitl, Magnolia dealbata.* Sahagún cautions that too many petals of *eloxochitl* are intoxicating, deranging the mind. *Magnolia mexicana* contains cardiac stimulants. *Izquixochitl,* the popcorn flower (*Bourreria spp.)* in the Boraginaceae is another admixture plant.

One last important admixture plant is *Quararibea funebris.* The flowers of *Q. funebris* are added to chocolate today in Oaxaca, so it is not an unreasonable assumption that they were used by the Aztecs. They are extremely mucilaginous and would be an effective additive for creating the foam that the Aztecs so highly prized.

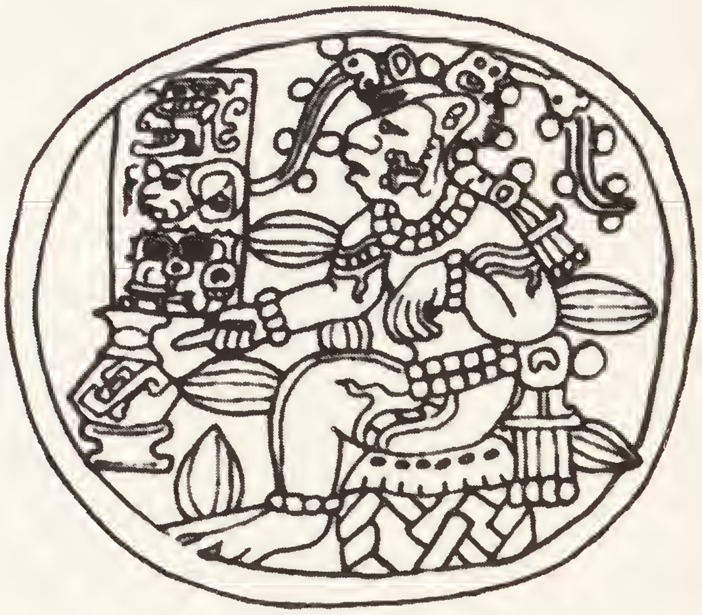
Gordon Wasson, in *The Wondrous Mushroom,* builds a case that *Quararibea funebris* is a "superior entheogen," and identifies it with the Nahuatl words *poyomatli, cacahuaxochitl,* and, at one place, *xochicacahuatl.* He further contends that *Quararibea funebris* flowers were the great muse of the Aztec poets and incited them to use *xochitl,* flower, as a metaphor for the entheogens (mainly mushrooms) in their poetry. I don't believe that any of these contentions is well supported.

In the first place, it is not clear that *poyomatli* refers to an "entheogenic" plant, let alone a "superior entheogen." José Luis Díaz and others such as Richard Heffern agree that the *poyomatli* in Sahagún is *Theobroma cacao,* or a part of the plant. Heffern identifies *poyomatli* with *cacahuaxochitl,* cacao flowers. Timothy Knab believes that *poyomatli* may be a nonspecific term. Certainly it is nonspecific in Nahuatl poetry, where Leon-Portilla usually translates it as "intoxicating," but to which we might add "blinding" or "confusing."

On the other hand, neither the drawing of *cacahuaxochitl* nor the drawing of *poyomaxochitl* in the *Florentine Codex* depict the distinctive cauliflory of *Theobroma cacao,* but neither are they very representative of *Quararibea.*

Wasson's contention that one of the flowers on the well-known statue of Xochipilli represents *Q. funebris* has some merit—the fused staminal tube characteristic of the Bombacaceae and the Malvaceae, though stylized, is well-depicted. This identification is certainly more compelling than that the petals of the butterfly-flower at the base of the statue are mushrooms—that seems more an indulgent fancy.

The case for *cacahuaxochitl* (though not *xochicacahuatl*) denoting *Q. funebris* must be considered carefully. In Oaxaca today *cacahuaxochitl* refers to *Quararibea funebris* flowers that are added to a cacao beverage called *tejate.* It may be that *cacahuaxochitl* has several meanings. It is certainly reasonable that flowers added to chocolate might be called the "chocolate flow-



MAYA CACAO GOD

ers." Still, from Sahagún it seems that at least in some instances the word refers to the flowers of the chocolate tree.

In one of Nezahualcoyotl's poems we find the paired lines:

in puyuma xochitli
in cacahua xochitli

flowers that intoxicate
precious flowers

(tr. by Leon-Portilla, 1992)

Leon-Portilla's translation is not bad, but the Nahuatl is better than any English could match—the overtones of blinding fragrance in *puyuma* add to the stimulating bitterness of the cacao and to the evanescent, blood-filled flowers that are life itself. It is unlikely that these lines should be glossed as "*Quararibea funebris, Quararibea funebris,*" as Wasson's reasoning seems to suggest.

Self experiments with *Quararibea funebris* have failed to reveal significant activity, but perhaps leaves, bark, or root are required to uncover its psychoactive effects, if any. *Quararibea funebris* does contain some interesting compounds: a tiny amount of a new alkaloid named funebrine, and several lactones, one of which is a powerful flavoring agent also found in aged sake. The most celebrated feature of the flowers is their strong and permeating aroma. *Quararibea funebris* also contains large amounts of glucose, fructose, and sucrose. I think that the foaming, flavoring, and sweetening properties of *Q. funebris* are wholly adequate to merit its poetic praise, if indeed such was ever intended, without further psychoactivity.

But while there was at least one actual plant associated with *poyomatli,* the root morpheme was used to form a number of different words that may shed some light on its many meanings. In the *Florentine Codex* we find *itoca poyomatli,* "cuplike blossoms, pleasing aroma," and *poyomayo,* where the word appears in a list of tobacco additives (along with mushrooms).

In the *Cantares Mexicanos* (song 4, 3:27) we find *poyomapoctli,* "poyoma-smoke," or "intoxicating fumes." John Bierhorst translates the stanza:

> *With narcotic fumes my heart is pleasured. I soften my heart, inhaling them. My soul grows dizzy with the fragrance, inhaling good flowers in this place of enjoyment. My soul is drunk with flowers.*

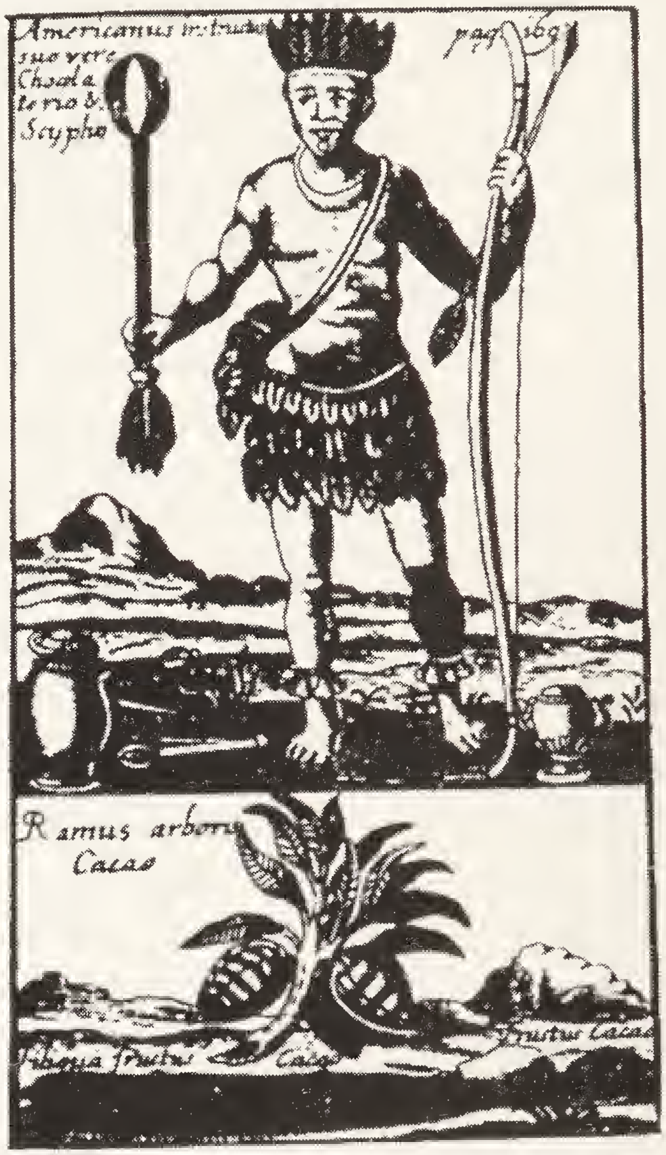
A suspiciously similar-looking word to *poyomah-* occurs at various places in Sahagún:

Signatures

ixpopoyome:	these were blind
ixpopoyomictiloque:	they slew them treacherously
quinpoyomictia:	slew them in ambush
tepoyomictia:	ambushes one
tlaixpopoyomictilti:	just so were they treacherously slain

The Plant

According to Frances Kartunnen, the root of these words is *poyo:tl,* "something evil." Etymological connection between the two stems is at this point speculative. But one does think of the Huichol *kiéri* and the solanaceae. Sahagún's informant states that *poyomatli* is the cup-like blossom of *cacahuaxochitl,* and that the blossoms are very aromatic and that they derange and provoke one. If we accept the derangement, the fragrance, the cup-like blossom, one might look more to *Brugmansia* or other solanaceous plants than to *Quararibea.* This is even more true if there is an etymological link to *poyo:tl,* with its implied visual impairment: "blinded," or "ambushed," to be "blind-sided."



BONTEKOE, DREY NEUE TRACTAGEN, 1688

But why is it that we feel that any drink the Aztec poets deemed worthy of praise must have been entheogenic? What about the West's rhapsodic invocations of coffee and tea? I think the answer is that we are an excited culture, already so immersed in stimulants that we are blind to their intrinsic magnificence.

. . . Our men will curse, obey;
Our women uncover themselves to the grinning victors for bits of chocolate.
—Robinson Jeffers, We Are Those People

PLANT WARS

Perhaps it is the plants that turn history, and we act in their behalf—sowing fields, opening plantations and imbibing the steaming extracts. The plant spirit moves through our bodies, spreading through blood and nerves, lymph and synapse, until our identities are merged and we do their bidding. We secure beachheads, plan campaigns to subdue a continent and win a culture.

> *Some plants are gregarious, others jealous. Tobacco gets along with everyone, excepting maybe Methodists. Wine and opium can't even attend the same party. Tea visits the poppy's house, but not that of the grape. Coffee seems to be imperialistic: thou shalt have no other stimulants before me, while khat doesn't mind coffee at the table at all.*

The plants have their own way of looking at history—it's not just a difference of time scale. It is difficult for humans to understand—we lack the plant's direct access to Light—we have to eat them.

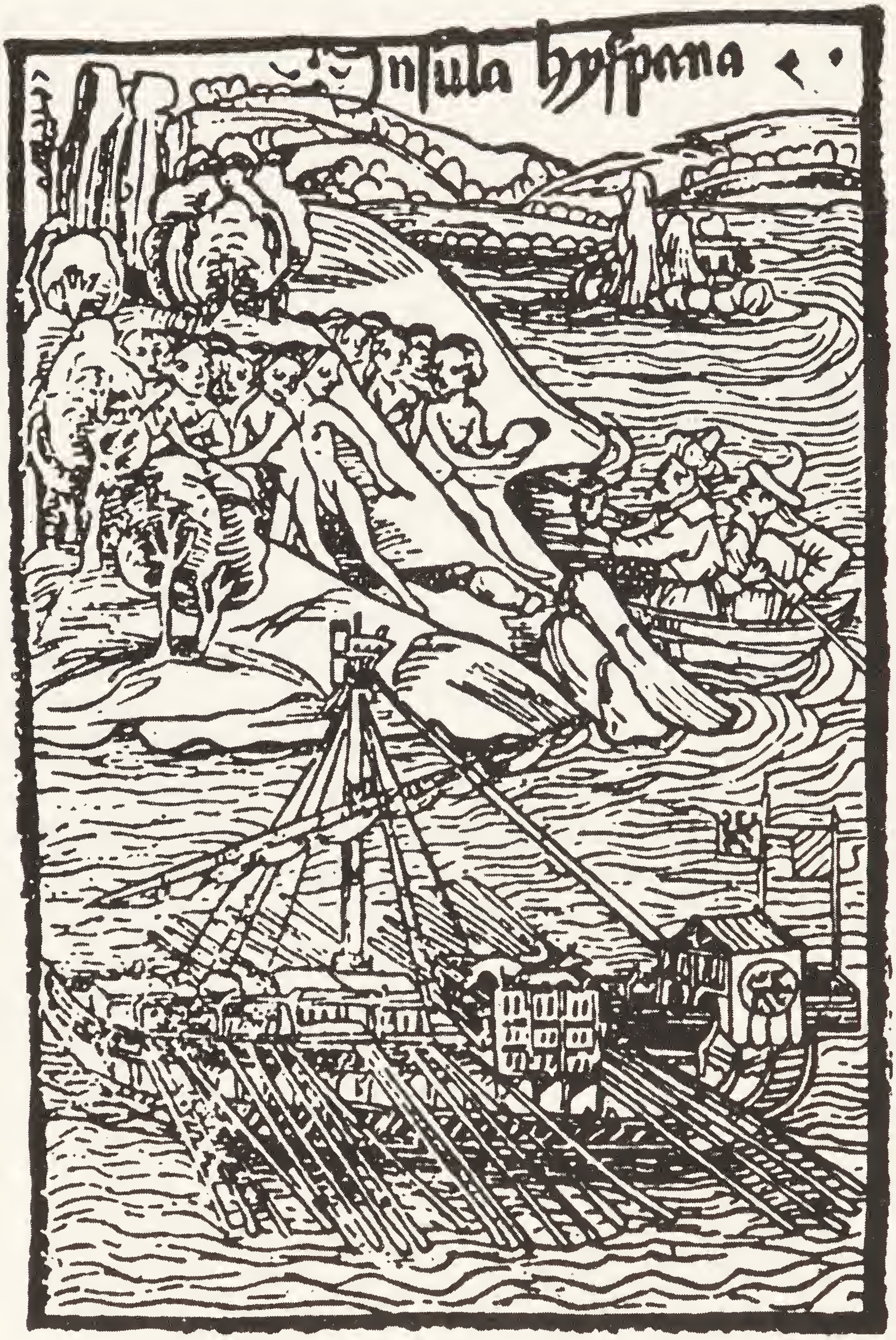
> *Alcohol has a streak of meanness, and its shrines are loud and noisy. Coffee favors conversation to music, so its houses are lively but not loud.*

In this primal communion—this, our eating of the god—we accept by surrendering. We give up our individuality, our autonomous freedom and will—and accept the grace of the Redeemer. The plant gets a chair on the top floor.

> *Cannabis mixes freely, except when it's paranoid. Hallucinogenic mushrooms and cacti need no others—they cross mountain passes and explore desert trails like free wandering monks. They greet the elementals, make friends with corn, then open the doors. No one is excluded.*

It's no wonder that Catholicism was so easily accepted in Mexico. Sacrificing the god, and then eating him, was, to Mesoamericans, not an unfamiliar concept.

> *And maize fed Spain, while the deer moved into the mountains.*


Insula hyspana

AMERICANS FLEEING FROM COLUMBUS, 1493

THEOBROMA CACAO, II

History When Hernando Cortés and his adventurers entered Tenochtitlan, its population was more than 200,000—more populous than any city in Europe (as is still the case with Mexico City)—and with more than twice that number in the surrounding area. Many of the Spaniards noted the beauty and cleanliness of the city. Some thought they must be dreaming.

the long causeways spanning the lake,
thousands, tens of thousands of canoes,
canals and water works, drinking water and sewers,
the whitewashed houses with rooftop gardens,
the houses of the nobles with courtyards and pools,
the great markets filled with vendors and people,
sandal makers, weavers, feathered mantles, goldsmiths,
foodstuffs, maize, beans, sage, rabbits, insects, fish,
the palaces, two ball courts, the twenty-five pyramids,
the seven skull racks.

All the houses and buildings plastered and painted:
greens and reds, turquoise and yellow.

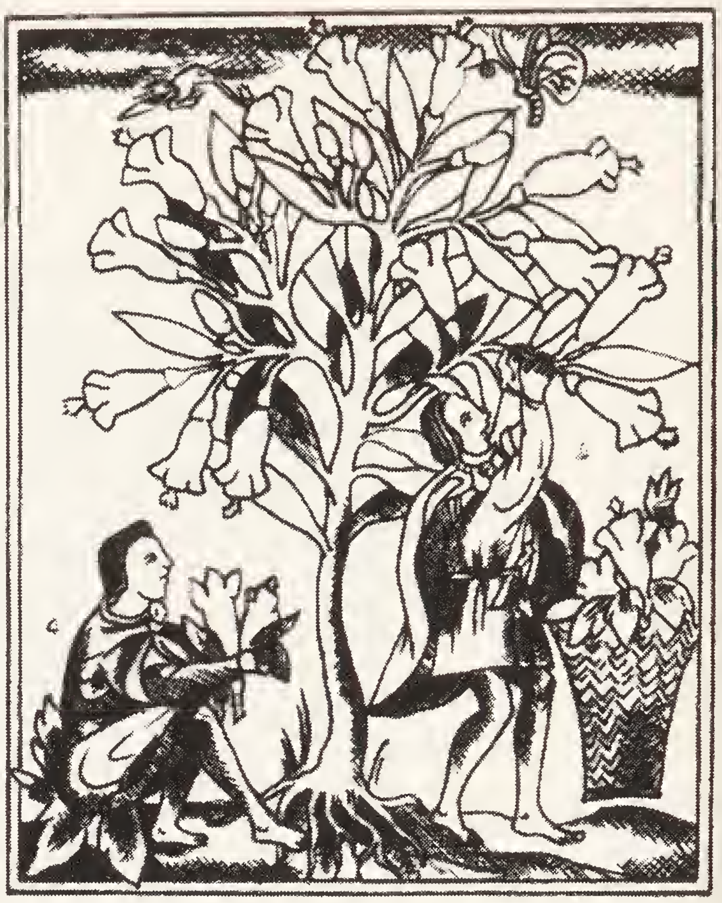
Within two years it was all in ruins, the princes were dead or shackled in irons, Cacamatzin had sung his last song, tortured to death by Alvarado. Moctezuma was dead. The population was decimated by smallpox. Thousands were taken as prisoners by the Tlaxcallans. The remnants had scattered.

Nothing but flowers and songs of sorrow
are left in Mexico and Tlatelolco,
where once we saw warriors and wise men.

Cacao beans continued to be used as currency (and did so until well into the nineteenth century), but several generations passed before *cacahuatl* reappeared as a beverage, in an altered form and with a new name, *chocolatl.* Sophie and Michael Coe, in *The True History of Chocolate,* agree with the Mexican philologist Ignacio Dávila Garibí that the most likely etymology of *chocolatl* is from the Maya word *chocol,* "hot," and the Nahuatl word *atl,* "water." The Coes point out that the Spaniards' first experience with chocolate was in the Maya lowlands. Another word, the Quiché Maya verb *chokola'j* means "to drink chocolate together."

The chocolate beverage that emerged among the creolized population of New Spain had another similarity to the Mayan tradition: it was drunk hot. It was also drunk sweetened. While some of the Aztec *cacahuatl* may have been sweetened with honey or *Quararibea funebris,* the new *chocolatl* was sweetened with cane sugar, and *really* sweetened. Early recipes (as do current) call for more sugar than cocoa. And the spices were changed: black pepper sometimes replaced chili, and spices such as anise and cinnamon were added instead of, or in addition to, the native flowers.

A carved stirring stick, the *molinillo,* came into use to froth up the foam, but aside from the significant sweetening with sugar, *chocolatl* was prepared much as it had been for thousands of years. In its slightly altered form, chocolate entered Europe by way of Spain in the early seventeenth century. In Spain, as at Tenochtitlan, chocolate was mainly drunk by the nobility, and a few wealthy merchants.



SAHAGUN, QUARARIBEA FUNEBRIS

Signatures

The Spanish even continued the Aztec association of cacao with human sacrifice by serving hot chocolate to those attending an *auto-da-fé,* and, in the finest Mexica tradition, sometimes to the victim as well as to the audience.

The Plant

From Spain, chocolate passed first to Italy, then later to France, sometime in the mid-seventeenth century. As had been the case with tobacco, with coffee, and with tea, it was the medicinal properties of chocolate that first attracted attention and were the impetus behind its spread. Alphonse de Richelieu, the Cardinal of Lyon, and perhaps the first to use chocolate in France, used it to "moderate the vapors of his spleen."

In 1664, Francesco Maria Brancaccio, an Italian, wrote that chocolate

> *restores natural heat, generates pure blood, enlivens the heart, conserves the natural faculties.*

Ecclesiastical circles were fond of chocolate, and Brancaccio was defending chocolate as a medicinal drink. A debate was raging as to whether chocolate was or was not a food, and thus whether or not it could be drunk on fast days. Seven popes gave their opinions on this matter, which was not completely resolved for two centuries. Generally, the Benedictines thought that drinking chocolate broke a fast, while the Jesuits, who had some trading interests in chocolate, maintained that chocolate was purely a drink and could be drunk during Lent and fast days the same as wine.

Still, there were occasional proscriptions against chocolate, always unsuccessful. When a Jesuit college tried to prohibit the drinking of chocolate, students dropped out in droves. In San Cristóbal de las Casas, a bishop prohibited the aristocratic ladies from drinking chocolate during mass. The Ladies quit going to the cathedral, and instead worshipped at a nearby nunnery where chocolate was in favor. Not long after, the bishop was poisoned, the poison administered in a cup of chocolate. A saying arose: "be careful of chocolate in Chiapas." Chocolate became a favored vehicle for poisons in Europe as well, its strong flavors masking those lethal.

The spices added to watery chocolate in Europe were rich and varied. The following Tuscan recipe calls for ambergris. Other recipes included musk, cloves, and cayenne pepper.

> *The Renowned Jasmine Chocolate*
> *of the Grand Duke of Tuscany*
>
> *Ingredients:*
> *10 lb. toasted cacao beans cleaned and coarsely crushed*
> *Fresh jasmine flowers*
> *8 lb. white sugar, well-dried*
> *3 oz. "perfect" vanilla beans*
> *4 to 6 oz. "perfect" cinnamon*
> *2 scruples (1/12 oz.) ambergris*
>
> *Method:*
>
> *In a box or similar utensil, alternate layers of jasmine with layers of the crushed cacao, and let it sit for 24 hours. Then mix these up, and add more alternating layers of flowers and cacao, followed by the same treatment. This must be done ten or twelve times, so as to permeate the cacao with the odor of the jasmine. Next, take the remaining ingredients and add them to the mixed cacao and jasmine, and grind them together on a slightly warmed metate; if the metate be too hot, the odor might be lost.*
>
> *—in Coe and Coe, The True History of Chocolate*

The Spaniards sometimes made the chocolate into a thick dark syrup, and ate it as a hot paste on bread. Chocolate is still served this way in Granada. (It is very good.) While there are records of the Spaniards sometimes adding eggs and milk to chocolate, it was the English who first made milk the customary base for hot cocoa.

Chocolate was available at the English coffeehouses in the latter seventeenth century, but, like tea (which was even more expensive), it was a luxury item. The English acquired cacao plantations when Cromwell's forces captured Jamaica. Pepys enjoyed chocolate. A doctor, Henry Stubbes, prepared chocolate for

Charles II, doubling the usual number of beans. Stubbes, as many before him and since, was convinced that chocolate was an aphrodisiac: "The great Use of Chocolate in Venery, and or Supplying the Testicles with a Balsam, or a Sap . . ."

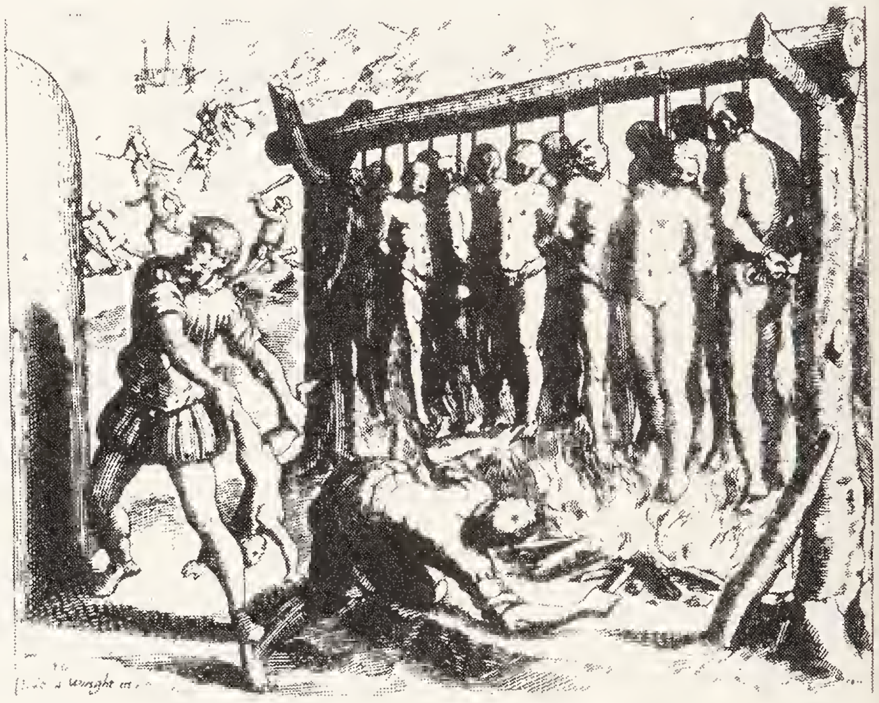
The Ally

Chocolate made with water is quite good, especially if you start with whole chocolate that hasn't been defatted instead of cocoa. Boil the water, remove it from the heat, and add an ounce or an ounce and a half of chopped up chocolate per cup, depending on whether the chocolate is sweetened. Try using unsweetened, and then adding minimal quantities of sugar to your taste. Try adding some spices. A little cayenne pepper is quite good, as is pasilla chili powder. Stir to dissolve the chocolate. Or use a blender. If you don't have a blender, you can get a head of foam by putting the chocolate in a canning jar and shaking it. The bitterness has a certain poisonous appeal.

History

We've already written about the slave trade in relation to tea and sugar, but chocolate was equally voracious for forced labor, both for sugar and to work the cacao plantations themselves. The English became prominent in sugar slavery, but the Dutch led the chocolate trade, carrying several millions of slaves across the Middle Passage to Curacao alone. Other European countries, Spain, Portugal, France, and Denmark, had their own ships.

"An Outpost of Progress."



CRUELTIES OF THE CONQUISTADORS, 1589

Signatures

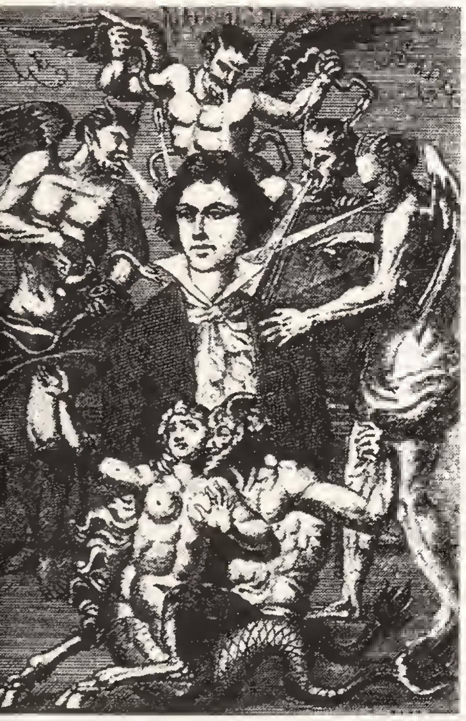
The Marquis de Sade was a chocoholic. He spend most of his life in prison, persecuted for his writings by whatever regime happened to be in power. De Sade was one of the instigators of the storming of the Bastille. What is most remarkable is that he performed this instigation from the inside—he was one of the seven prisoners being held in the Bastille at the time. He made his speeches to the crowds outside through a megaphone he had constructed from a urinal.

I first learned of de Sade from a philosopher and cat burglar from New Orleans named "Shorty." Shorty knew all de Sade's books, and could quote from them. He could carry on for hours (a much appreciated skill, given our circumstances) outlining the plots and describing various scenes. Like Shorty, de Sade's characters were non-stop talkers, continuing their philosophical eloqutions through all manner of sexual orgies, orgasms and ejaculations, without pause. Shorty remembered all that part too, and could outline their arguments and speeches.

Shorty liked chocolate. His other favored author was Sir Richard Burton.

De Sade was a writer. There is little evidence that he ever practiced the orgiastic cruelties, flayings, dismemberments, etc., etc. that he wrote about with such gusto and detail. He did, it seems, organize at least one orgy, at which the prostitutes and other guests were all served chocolate. That the chocolate was laced with Spanish fly, as was later claimed, is unlikely. According to the story, the orgy was successful, and the Divine Marquis was able to enjoy his sister-in-law, for which he was ordered arrested. He fled with his servant, was arrested, escaped, and was then sentenced to death *in absentia.*

The chocolate, the flaying of the victims, the dismemberment, the drinking of blood, and the cannibalism in de Sade's writings are all familiar enough from the rites of Tenochtitlan. Not believing that such acts were necessary to make the sun rise, de Sade made it all sexual, and as consciously offensive as his fertile imagination would allow. Meanwhile, on the outside, the guillotine kept falling.



M. DE SADE

fertile imagination,
because there is no fertility in the sex acts—
the libertines abhor "breeding."

De Sade's single erogenous zone is his imagination, at once his stimulation and his organ of generation, his womb.

The imagination is the only cradle where pleasures are born. [Otherwise] all that remains is the physical act, dull, gross, and brutish.

—Sade: Juliette

Imagination is magic. Imaginative sex is sex magic. Visualization. Dances. Drums. Or colored lights on a stage.

In *Sexual Personae,* Camille Paglia astutely points out the fraternal relations between de Sade and Blake, literary-wise. She claims that de Sade was a corrective reaction to Rousseau, who portrayed nature as wholly benevolent. If Rousseau's Great Mother were Isis, then de Sade added Kali.

Yet de Sade's sexuality, despite its prophetic vision of twentieth-century serial killers, is essentially autoerotic. Rousseau, no less imaginative, put it into practice and remained the son/lover of Great Mother throughout his life. Like de Sade's characters, he sought to transcend possessiveness, but he did it through love rather than cruelty. All of his important teachers were women, and the happiest years of his life were spent with "Mamma," Mme. de Warens, in a *ménage-à-trois* with her majordomo, the inestimably honorable M. Anet.

> *Thus between the three of us was established a bond perhaps unique on this earth. Our every wish and care and affection was held in common, none of them extending outside our own little circle. Our habit of living together, to the exclusion of the outer world, became so strong that if one of the three was missing from a meal or a fourth person joined us, everything was spoiled; and in spite of our private relationships even our* tête-à-têtes *were less delightful than our being all three together.*

Paglia contrasts the Apollonian hierarchy of the Enlightenment with the sadomasochism of Romantic democracy. The sulphurous odors of poison are strong here, and we should pay attention. That Dionysus would make an appearance in idyllic Arcadia should not surprise us—there is more to his revels than a picnic in the woods. But we must examine the political implications of Paglia's fascination with dominance closely, as the propositions "nature is hierarchical" and "sex is violence" are easily co-opted by armed gangsters to rationalize mass slaughter and enslavement. The fact remains, as Kropotkin pointed out, that throughout most of our history human societies have lived cooperatively and comparatively peacefully, without a police force.

From his prison cell, de Sade wrote regularly to his wife. He always asked her to send him chocolate. De Sade liked his chocolate dark:

> *black inside from chocolate as the devil's ass is black from smoke.*

The Plant

Early in the seventeenth century, large stands of *forastero* cacao trees were discovered in the coastal lowlands near Guayaquil, Ecuador. The forest around these trees was cleared, and the stands were expanded by further planting. *Forastero* cacao is quite inferior to *criollo* cacao—the beans are hard, dry, and bitter—but thanks to its hardiness and to African slaves, it was cheap. By the early nineteenth century almost half of all the cacao produced in New Spain was *forastero.*

In the Amazon the Jesuits also found *forastero* cacao, and established a huge force of enforced Indian labor to harvest the beans. Venezuela, by contrast, planted *criollo* cacao, both on the coastal plains and on the island of Trinidad. When *forastero* cacao was later introduced to Trinidad, the trees hybridized with the *criollo* trees and produced a new variety, *trinitario* cacao. *Trinitario* combined the hardiness of the *forastero* trees with some of the flavor of the *criollo,* and became a favored variety.

Today the major producers of cacao are the Ivory Coast, Brazil, Ghana, Malaysia, Indonesia, and Nigeria. Eighty percent of world production is *forastero,* ten to fifteen percent is *trinitario,* and only five to ten percent is *criollo.* Most of the *criollo* chocolate is used by upscale European confectioners, but I have heard that a progressive group in Venezuela will soon market dark bars of fine, pure *criollo* chocolate.

The Ally

Chocolate traveled with sorcery and conjuring, with the *nahualli,* with prophecy, and with poetry. And though Voltaire acquired a taste for chocolate in his later years, our other model chocoholic, after the Divine Marquis, is Johann Wolfgang von Goethe (1749–1832). Goethe occasionally drank coffee, but chocolate was his abiding passion.

Along with chocolate, Goethe had a life-long interest in shamanism. This interest was certainly abetted, if not sparked, by his friend Johann Gottfried Herder (1744–1803), and Goethe may even have collaborated in some of Herder's writings. Herder's theories of the shamanic origins of religion predated those of Weston La Barre and Gordon Wasson by two centuries. (Herder also opened the way to modern poetic theory by modifying Aristotle's theory of mimesis. Herder said that the artist did not imitate nature, *natura naturata,* but creation, *natura naturans.*)

Herder was a philosopher and theologian. Like Didereot, he carefully read the mounting number of travelers' reports about shamanism in Siberia, Mongolia, and North America. Unlike Voltaire, Herder had a quick and critical eye for the eurocentrism that permeated most of such writings, and deplored it. His writings on the methodology of field work anticipated anthropology. In fact, Johann Blumenbach, who was a professor at the university at Göttingen and a friend of both Herder and Goethe, is called the founder of anthropology. Göttingen quickly became the center of anthropological learning and also of artifacts, as the students trained there would send their specimens back to their alma mater. Goethe visited Blumenbach at Göttingen and saw the famous Tungus shaman costume there that a Göttingen alumnus, Baron Georg Thomas von Asch, had sent to Blumenbach from Siberia.

Herder refused to dismiss magic out of hand, and read Paracelsus, Agrippa, the Renaissance neoplatonist Pico, Böhme, even Fludd. He never believed that mathematics could model the universe, because there were other variables that were intrinsically nonmetrical. In this he anticipated Sir Arthur Eddington, and in some respects "hidden variable" physicists such as Albert Einstein and David Bohm. Herder was interested in the effects of weather, climate, and geography on human psychology. He was seeking a holistic approach to knowledge, incorporating not only observation and experiment, but also diet, sexuality, and spirituality.

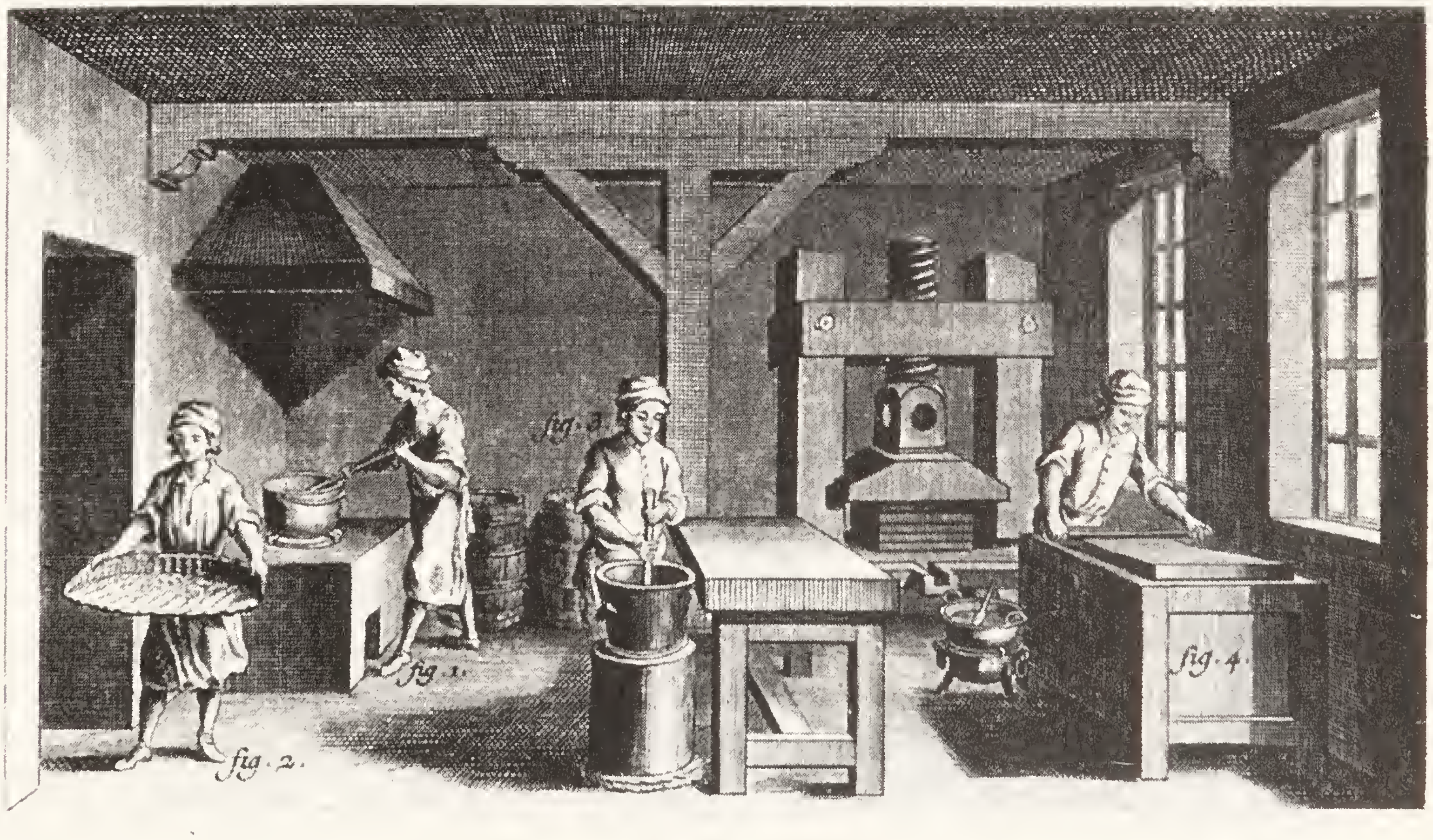


fig. 1.
fig. 2.
fig. 3.
fig. 4.

EIGHTEENTH-CENTURY CHOCOLATE MANUFACTURE,
FROM THE ENCYCLOPÉDIE OF DIDEREOT AND D'ALEMBERT

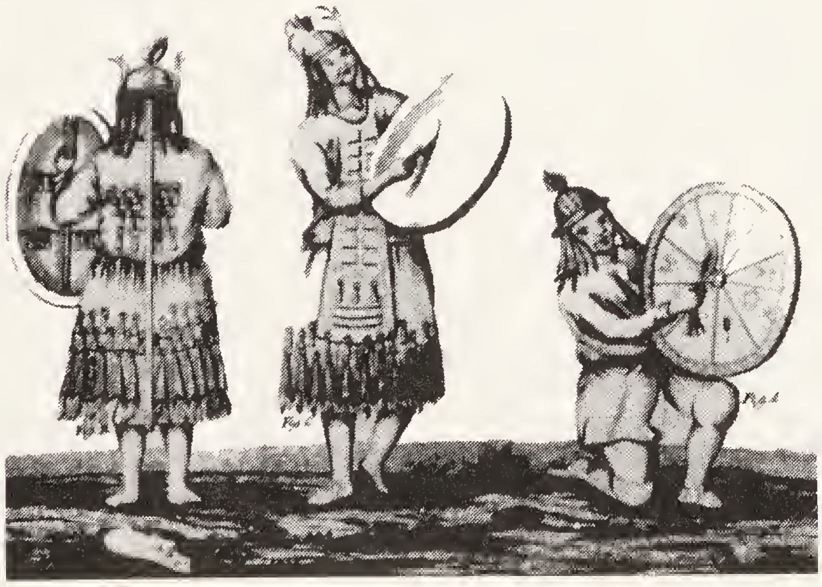
> *Herder had come to believe that enthusiasm, shamanism, and all aspects of the irrational had to be acknowledged openly and confronted. They were natural. Whenever the natural was disavowed, or ignored, or repressed, or imprisoned by predetermined codes, whether Franco-Roman neoclassicism or any other, the eventual result could, he maintained, only be an eruption of gigantic proportions.*
>
> *—Gloria Flaherty, Shamanism and the Eighteenth Century*

Thus he understood the French Revolution. He had read his *Bacchae.*

Herder's prototypical shaman was not Dionysus but Orpheus. Herder saw the similarity between Orpheus and the Egyptian Hermes, and he recognized that they represented shamanism entering the historic epoch. Herder proposed that shamanism, far from being the chicanery of jugglers, was the origin of all religion. He named Zoroaster as the first to systematize shamanic practices and beliefs into a codified written corpus. It is easy enough to see Rilke as one of Herder's spiritual descendants.

> *Herder persisted in his belief that poetry, or better, performed song, touched the human psyche in such a way as to release something into the soma that subdued rage, relaxed stress, and enabled individuals to tolerate each other's whims and foibles. It is almost uncanny that the twentieth century's highly technological research into the physiological workings of the brain explains the theta waves as being induced by images, poetry, music, and performance to help regulate the body's immunological system. Herder firmly believed that the shaman's performing talents had produced human civilizations and allowed them to develop.*
>
> *—Gloria Flaherty, Shamanism and the Eighteenth Century*

Goethe shared his friend Herder's mistrust of mathematical science, seeing it as the third, "dogmatic" stage of science. Goethe proposed that there were four stages, or historical forms, of science. The third stage dismisses the first as superstition, and limits the second stage to refinement of its own paradigm. But Goethe envisioned a fourth stage, and tried to practice it in his botanical writings and his theory of color.



PETRUS SIMON PALLAS, SHAMANS IN THREE POSES, 1771–1776

Four epochs of the sciences:
childlike,
poetic, superstitious;
empirical,
investigative, curious;
dogmatic,
didactic, pedantic;
ideal,
methodical, mystical.

—Goethe, Maximen und Reflexionen

Goethe maintained that those who deprecate superstition were worse off than pre-scientific peoples: "we find no easy substitute for the wondrous creatures, gods, soothsayers, and oracles of the ancients."

Like the Eskimo shaman Kilimê, Goethe found creativity mysterious. For Goethe, inspiration was a kind of possession, a dealing with spirits and demons. Poets and artists were those who could open themselves to the demons.

> *In poetry, especially in that which is unconscious, before which reason and understanding fall short, and which therefore produces effects so far surpassing all conception, there is always something daemonic.*
>
> *—Goethe, Conversations (Eckermann) (F.174)*

The Art is magical work, shamanic work. All of it is about healing. What Herder found in Orpheus, Goethe found in the Faust legend, and Faust became the focus of his life's work for more than fifty years.

Scholar and doctor,
conjurer and alchemist:
he DID have a laboratory.

The shamanic ally is Mephistopheles, a fallen angel.

In *Faust,* the poison path is so completely articulated that it is difficult to excerpt only a few verses. It is worth our time to follow this chocolate lover briefly through what is surely the greatest literary work in the West to investigate shamanism. Goethe presents the preparation, the initiation, the methodology, and many succinct nuances of decorum. There is even a Wager.

If with flattery you can ever beguile me
into finding delight within myself,
if with pleasures you can wile me,
then let that day be my last.
That is my wager . . .

If I should ever say to any moment:
Verweile doch, du bist so schön,
(Linger awhile, you are so beautiful!)
you may slap me into fetters—
for I would gladly perish then.

Faust I: 1694

Faust's journey beyond rationality is through women: he follows the Desire Path and presents a profound elucidation of our Way. Even with the help of the Great Ally, Desire remains. Devils and demons enter and speak, but Desire is the poison from which there is no escaping.

Go on, try
one more time . . .

Faust enters altered states of consciousness. In a *Hexenkuche,* a witch prepares him an elixir. And we get a clue that besides Mephisto and Desire, Faust has at least one other poisonous ally: Doubt. But after Faust sees the face of Helen by gazing into the witch's mirror, Mephisto has no trouble overcoming Faust's resistance, and he drinks the medicine to the bottom.

Du siest mit diesem Trank im Leibe
Bald Helenen in jedem Weibe.

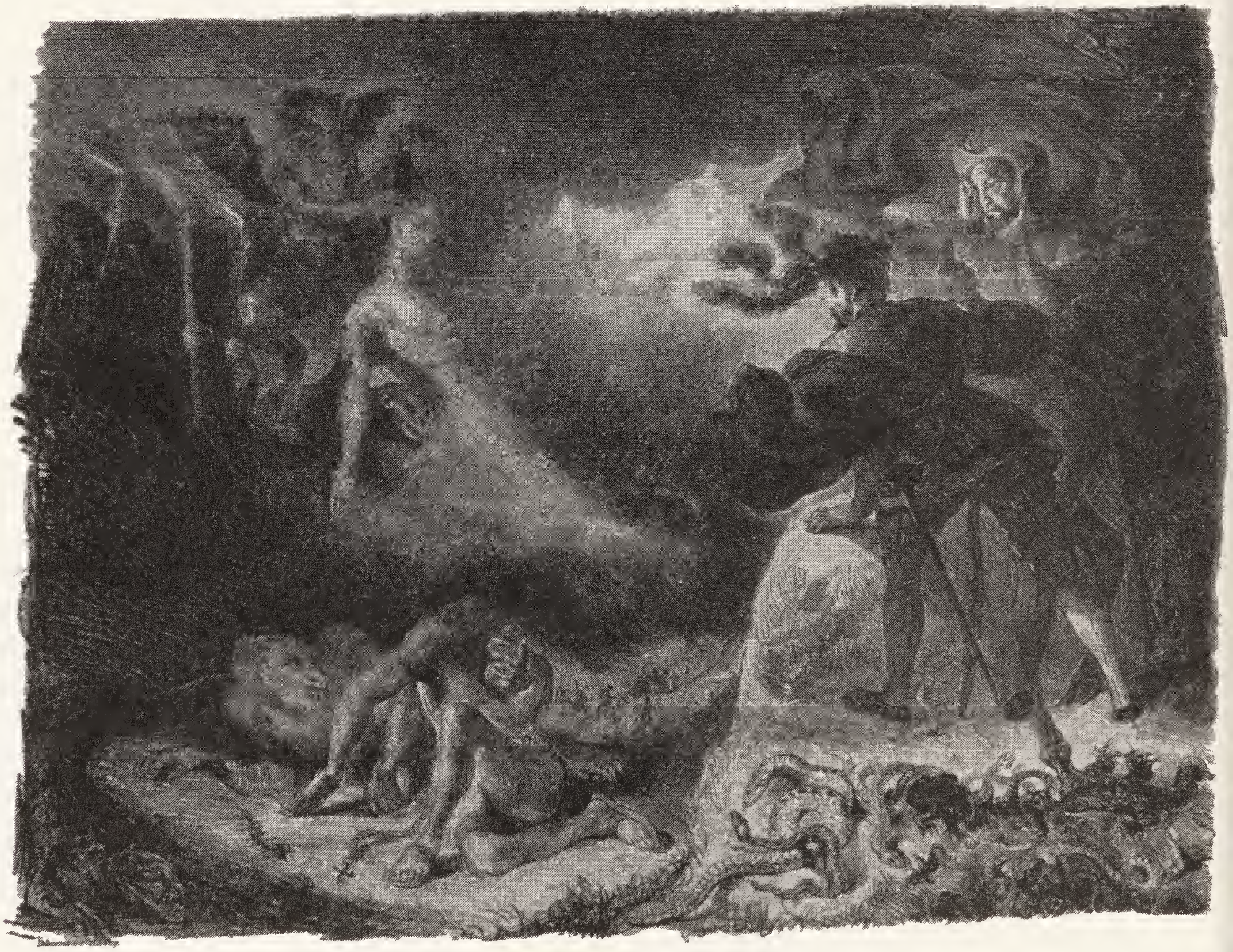
Once this drink is in your frame,
You'll see Helen in every dame.

Like, probably ecstasy. Thus, Gretchen.

Mephisto takes Faust to Walpurgis Night.

kind of like a Burning Man

He offers him a broomstick. Faust wants to go to the center of the frenzy, thinking there he will find answers, but Mephisto stops him at a quiet grotto, where the witches are more available.



FAUST'S VISION OF GRETCHEN ON WALPURGIS NIGHT

Besides, it is an ancient practice
To create small worlds within the great one.
I see young witches there, completely nude,
With older ones, just as cunningly veiled.

(as I said . . . kind of like Burning Man—dancing on the periphery.)

As Faust dances with a young witch, the voice of Enlightenment speaks, trying to deny everything that is happening as non-logical and non-scientific.

You are still there? Now that's unheard of!
Please disappear! Surely we've got enlightenment.
This devilish rabble won't follow the rules.

Failing to sweep away the dancing visions with his command, the "Filth-seer" promises to endure and someday to write a "trip report" in which there are neither demons nor poetry.

A "scientific" trip report . . . Shall we count them?

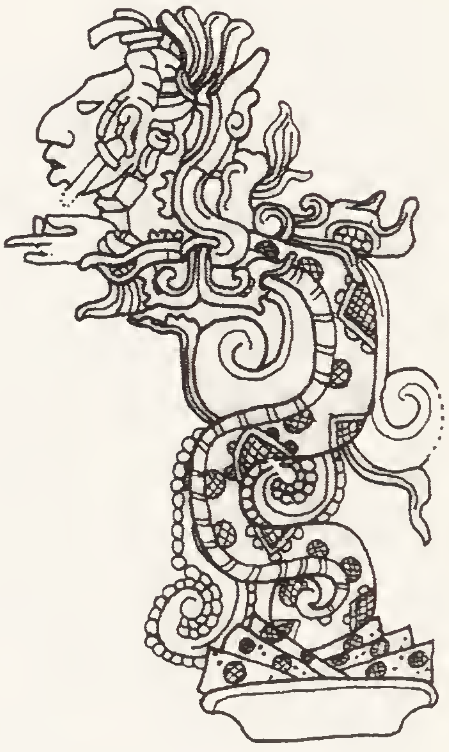
Mephisto chides Faust for abandoning his seduction of a naked young witch just because a red mouse climbs out of her mouth. In a dream within a dream, Goethe presents a parade of Types:

The Realist, The Child-of-the-World, The Sensualist, The Sceptic, The Awkward One, The Purist, The Idealist, The Matron, etc., etc., etc.,

and records their reactions to the phantasmagoria. Faust, Mephistopheles, and the witches are content to know that

It would seem we've been admitted
to the sphere of dreams and magic.

In Part Two, in the first conjuring of Helen, there is even a Scythian tripod with pleasing fumes that stir the soul. Faust is the acting shaman, and the ladies comment on a certain femininity to his movements. Helen appears, but Faust ruins everything in this first attempt by trying to grab her.



MAYA VISION SERPENT

Georg Lukács reads in *Faust* a critique of bourgeois capitalism. Money is magic: Mephistopheles invents paper currency and, like a spell, it transforms both people and countryside. Mephistopheles sets about building up Faust's commercial fortunes and remarks:

Unless I'm all at sea about maritime matters,
war, trade, and piracy are together
an inseparable trinity.

Goethe knew the sources of his chocolate!

Lukács is aware of the ancient bond between love and magic. Poison is potion, and potion is love potion. But in a corrupt age the greatest aphrodisiac, as Henry Kissinger once quipped, is wealth and power. Faust seduces Gretchen with jewels.

while the poor boys
make do
with poems.

But Lukács believes that in bourgeois society the demands of wage earning can make love a prison, especially for the young. Love is necessary to complete our Path, but we can see that from a magical perspective monasticism has nothing to do with morality—it's just a way to avoid overwhelming complications while one is most vulnerable.

> *In a society divided into classes, therefore, a premature union, even one founded on the deepest and most genuine love, can become the starting-point of irresolvable tragic conflicts. If it endures, the young man involved in the union will be the victim; if under the pressure of his fettered possibilities for development, he breaks away, then the girl must be sacrificed.*
>
> *—Lukács, Goethe and His Age*

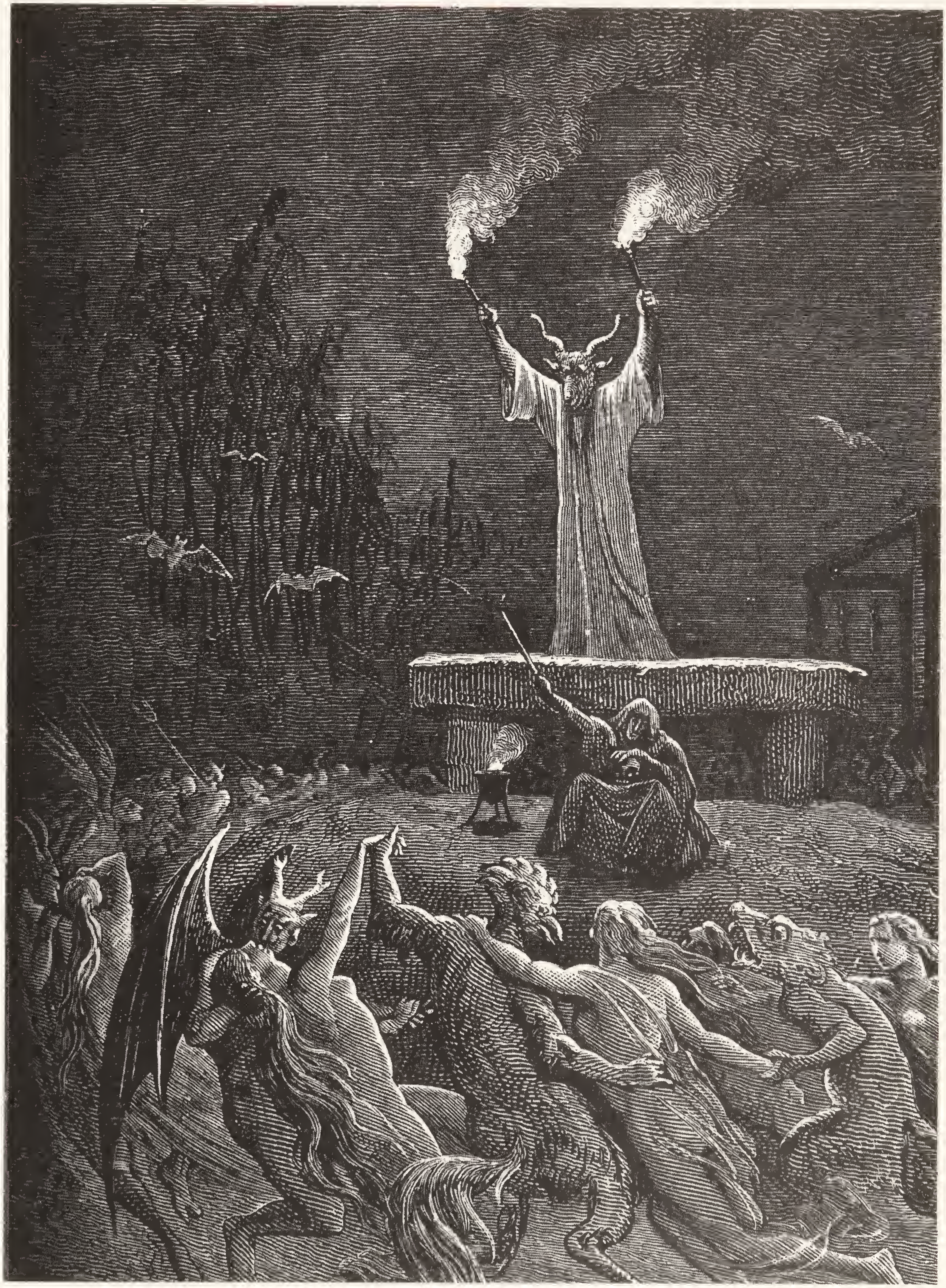
If Gretchen is partly a symbol of the consequences of coercive seduction on those with less power, Goethe is not content with moralistic simplicity. Nor, despite current fashion, ought we be. Faust doesn't abandon Gretchen, in spite of the carnality of his original intentions—the Work is genuine. But Gretchen is not ready for the deeper poisons, hath not the luck. She shirks from Mephisto. She cannot cross over and Faust must leave her to her Salvation.

Gretchen's lessons were not lost on Faust, and in fact she returns at the end of the play to be his teacher again. But first Faust must find the woman who is fully his equal, the shamanic Queen of Heaven: Helen of Troy.

Alchemically, *Faust: Part Two* progresses through the *Rubedo,* the tempering. Faust does obtain Helen, and they name their child Euphorion.

Go on kid, look it up yourself. This is about you.

Euphorion wants to climb to the high places, he wants to join the fight for the Good, he wants to fly. And we have the incongruous scene of Faust and Helen as Mom and Dad, Faust telling Euphorion to be careful and not to take any risks, to just have a nice quiet time in the country. But Euphorion is Icarus. He flies too high and he dies. Like Daphne, Helen dissolves in Faust's arms.



WALPURGIS NIGHT

I have not fought my way to freedom yet!
If I could rid my path of magic,
could totally unlearn its incantations,
confront you, Nature, simply as a man,
to be a human being would then be worth the effort.

Faust next resolves to do Good Work in the world. He dreams of creating new housing and new living space. As he goes about subjugating the earth, Baucis and Philemon become "collateral damage" of rampant technology. Even as the Lemures are digging his grave, Faust believes they are working on one of his canals.

In the closing stanza Goethe says:

All that is transitory
is but a metaphor.

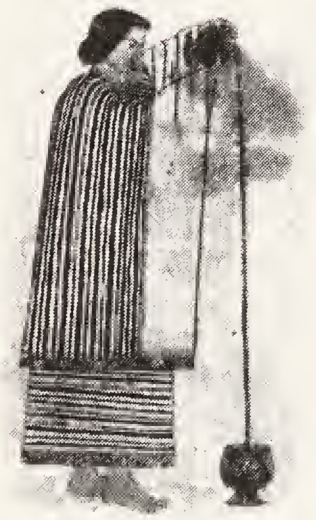
One thinks of Nezahualcoyotl. The poem ends:

Das Ewig-Wiebliche
Zieht uns hinan.

The Eternal Feminine
Leads us onward.

For all of those on the path of knowledge in a technological age, there is one last prescient and haunting passage in Lukács:

> *When Faust seeks to liberate himself from magic, he is striving after a normal human life in which he would be able to realize practically what he regards as right only through his own force, his* own *activity. However, as Goethe knows and Faust suspects, this is impossible. Without Mephisto's help, Faust would have to return to the desperate impotence of his study room. Whether or not this return takes the form of accepting a subordinate position as an engineer in a capitalist firm is irrelevant to the problem.*
>
> *—Lukács, Goethe and His Age*



Sigh.

History In 1828, a Dutchman named Coenraad Johannes Van Houten discovered a way to remove most of the cocoa butter from chocolate. The resulting mass was dry enough to grind into powder, and, alkalinized with carbonate salts, could be mixed with water. This invention of "cocoa," along with the increasing use of chocolate in confections, brought about a huge increase in the per capita consumption of chocolate. As we have already noted, this increase in chocolate consumption also brought about a large increase in the demand for sugar, and was a driving force of the slave trade.

Edible chocolate in bar form was the invention of the Fry family in England. The Frys used Van Houten's process to make cocoa, and then mixed it with sugar and melted cocoa butter, still the way the best bar chocolate is made. The Frys were Quakers and refused to buy cacao beans from Portuguese West Africa, where some of the worst working conditions prevailed.

The food of the gods seemed to attract Godly men. (But see notes.)

The favorite drug of teetotalers.

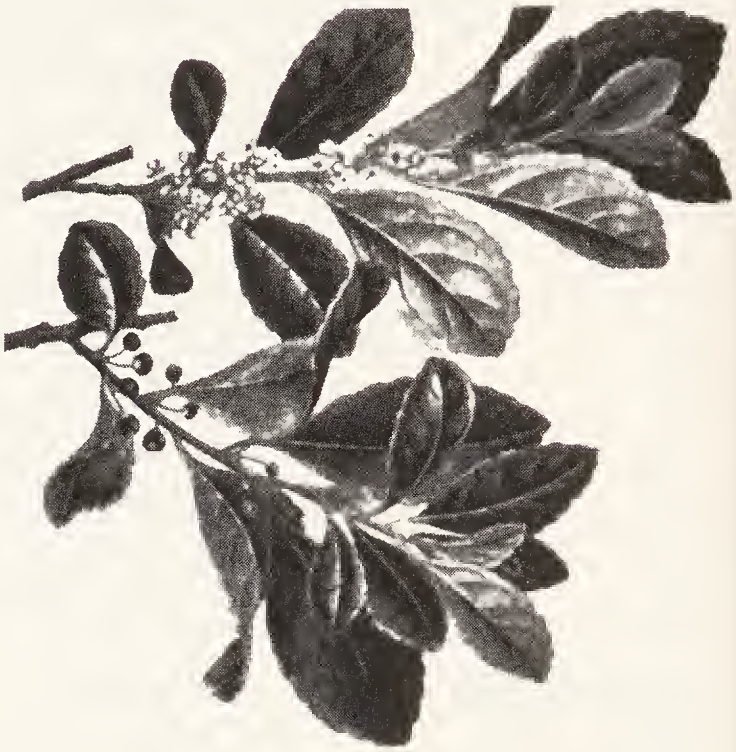
The other great English chocolate company, Cadbury, was also a family of Quakers. The Cadburys built a company town for their workers along progressive lines, with housing, a dining room and a reading room for the workers, and prohibited alcohol. In the United States, Milton Hershey, a Mennonite, went even further. Hershey came up with a process to mass produce the milk chocolate that had been invented by two Swiss, Henri Nestlé and Daniel Peter. Hershey founded his own town, named "Hershey." Along with a school for orphan boys, Hershey's town contained five churches, the Hershey Department Store, the Hershey Bank, the Hershey Hotel, a free library, fire department, gardens, a zoo, and a rollercoaster. Hershey later built another Chocolate Town in Cuba.

The Ally

Yolletl-eztli:
Linger a while, precious flower.
Chocolate song: red valentines
in a heart-shaped box

ILEX VOMITORIA

Related species *Ilex guayusa, Ilex paraguariensis. Paullinia cupana* (related by chemistry, not phylogeny).



ILEX PARAGUARIENSIS, STARKS, 1981

Common names *Ilex vomitoria* is the "Black Drink": *yaupon,* or *cassina. Ilex paraguariensis* is the well-known yerba mate of southern South America. *Paullinia cupana,* best known from Brazil, is called guarana.

Chemistry All of these plants contain caffeine.

Taxonomy *Ilex* is the holly genus, in the Aquifoliaceae. *Paullinia* is a woody liana in the Sapindaceae.

Ilex vomitoria is most closely related morphologically to three Caribbean species of *Ilex* growing in cloud forests. One other species, *Ilex chiapensis,* from Chiapas and Vera Cruz is included in the series Vomitoriae. *Ilex guayusa,* and *Ilex paraguariensis,* appear to be related more remotely.

Ilex vomitoria is incompatible with any of the other *Ilex spp.* in the United States, but has produced hybrids with two Asian species of *Ilex*. The phylogeny of the Asian *Ilex spp.* appears to mirror that of the New World species, the two branches separating and developing in their similar ways sometime during the Tertiary.

Part Used The leaves (of *Ilex spp.*), roasted and made into a tea.

How Taken Drunk boiling hot to maximize caffeine absorption.

Effects Briskly stimulating.

Pharmacology Caffeine has been called the only true cortical stimulant known to modern medicine.

The Plant, Ilex vomitoria Yaupon is the only North American holly known to contain caffeine. The plant is dioecious: male and female flowers appear on separate plants. Not the most common strategy among plants, but those who use it, such as marijuana and willow, seem to get by.

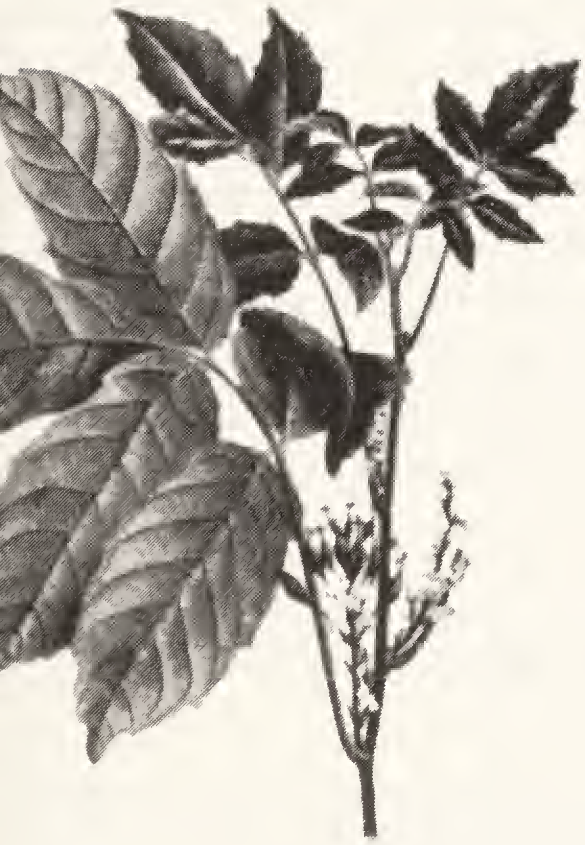
Ilex vomitoria grows along the Gulf Coast from Corpus Christi in Texas to south of Apalachee Bay in Florida, up the East Coast from Cape Canaveral to Cape Hatteras, at scattered places inland in southern Georgia, northern Florida, southern Alabama and Mississippi, southeastern Texas along the rivers, and between the Red River and the Arkansas into the southeastern tip of Oklahoma. With several exceptions, most of the indigenous tribes and peoples inhabiting the areas in which *Ilex vomitoria* grew used the black drink. A number of tribes further inland obtained the plant through trade, or through annual pilgrimages hundreds of miles to the coast. Cabeza de Vaca specifically mentions drinking ceremonies among nineteen of the tribes through which he wandered. His accounts, first published in 1542, closely match those of black drink ceremonies described by later explorers.

The black drink was often used ceremonially as a purification and cleansing rite. Early observers noted that an "eerie, awesome" vocalization was intoned by the Indians during the drinking. General Oglethorpe drank yaupon with the Creeks during his treaty mission in 1739. More informally, many tribes drank yaupon every morning (and purged), along with smoking tobacco, as a social ritual of friendship. The Cherokees called yaupon "the beloved tree." The Choctaw called it *Esta Hoola,* "the most beloved." A Quaker merchant named Jonathan Dickinson, who was shipwrecked on the east coast of Florida in 1699, reported a black drink ceremony among the Ais that lasted three days: fasting, dancing, drinking the black drink. Which says something about the ease and pace of life in those times.

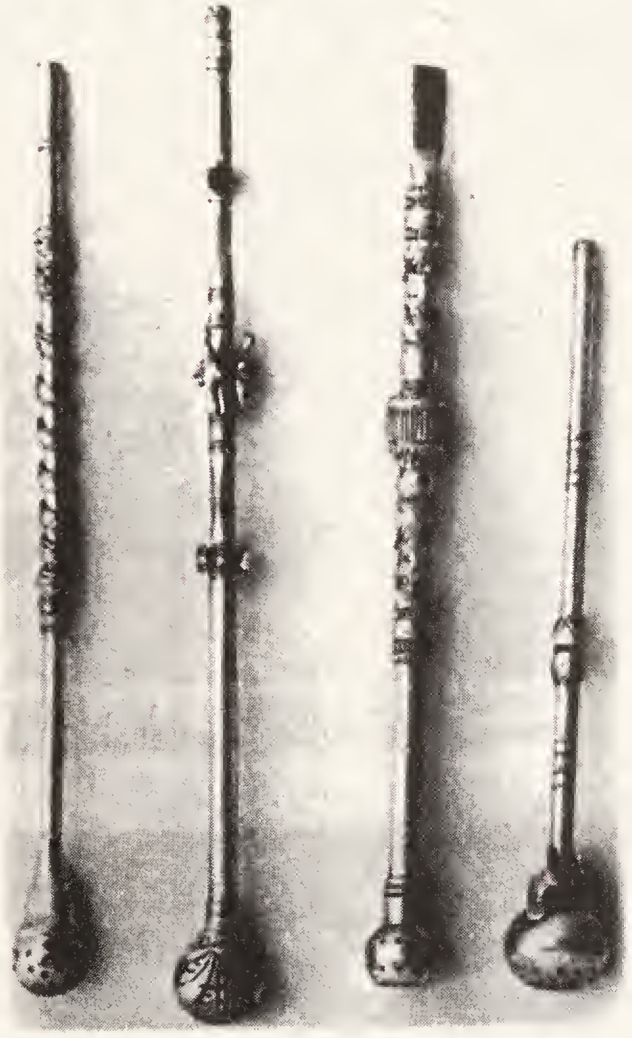
Vomiting was common. But it seems most likely that this purging was voluntary—a ritualistic cleansing, and less an intrinsic property of the tea, since there are many reports, extending into this century, of both Indians and whites drinking yaupon tea without feeling any need to vomit. Large quantities of any hot beverage, especially on an empty stomach, tend to make regurgitation more . . . accessible. Yaupon tea was widely drunk during the American Civil War as a coffee substitute, especially in the South.

The medicinal properties of the black drink were widely recognized in the eighteenth and nineteenth centuries. Besides its use as an emetic, the black drink was used as a diuretic, and for kidney stones. Both Indian and white women in Texas drank the decoction for suppressed menses. The Catawba used the black drink for "mental troubles." The Choctaws used the black drink for divination. The Chitimacha smoked *Ilex vomitoria* in addition to drinking it.

The black drink ceremonies are strongly evocative of Mesoamerica. At least as far back as 1000 CE, the black drink was associated with conch shell drinking cups incised with Mesoamerican style glyphs and figures. The black drink was often prepared



PAULINIA CUPANA,
STARKS, 1981



MATE BOMBILLAS

with a froth or foam on top. One Spanish friar, in his missionary endeavors, even used the bubbles on the black drink as a metaphor for the multitudinous aspects of God. The Apalachee engaged in a black drink ceremony before the big annual ball game with a neighboring tribe. One cannot help thinking of cacao.

Francis Jennings suggests that there was an actual migration and colonization of the Mississippi Valley by Toltecs around 800 CE, coinciding with the abandonment of Teotihuacan. Strong Mesoamerican influences appeared in the Mississippi Valley and throughout the Southeast at that time: a new and superior form of maize agriculture, cities such as Cahokia built around a truncated pyramid (distinctly different from Hopewellian "mounds"), and settled, stratified societies. It would have been natural to have found in the caffeine-rich black drink a substitute for the beloved black cacao.

Why has the black drink all but disappeared? For the Indians, the answer is not so difficult. They were overwhelmed by the European colonists and forced to move to Oklahoma, far from the richest sources of the plant. Their populations and their cultures were pressured to the point of extinction. And another plant appeared, better suited to their crisis: peyote.

Among the whites, we can only look to the overpowering presence of coffee. Today *Ilex vomitoria* is a common ornamental shrub in the environs of New Orleans.

The Plant, *Ilex paraguariensis*

Ilex paraguariensis, yerba mate, is widely drunk in the more temperate latitudes of South America: Brazil, Paraguay, Argentina, and Chile. Mate also has a reputation as a purgative, though this is by no means its customary use. Traditionally, mate is drunk from a gourd fitted with a silver stem, called a *bombilla:* the gourd being passed around the circle until everyone has drunk. It is said that one should not drink mate if one is chewing coca because of the risk of burning one's lips on the silver straw.

Indians in Argentina drank mate and called it *caa-matí,* a combination of a Guarani word meaning "herb" with a Quecha word, *matí,* which refers to the gourd.

> *The moon wanted to walk on the earth. She wanted to eat fruit and to bathe in a river. The clouds helped her. All night the clouds covered the sky so that no one could see that the moon was missing.*
>
> *The moon walked through the wonderful forests of the Paraná. She reveled in the*

MAYA MOON-GODDESS

> *new fragrances and the exotic and mysterious sounds. She swam in the river for so long that a peasant had to rescue her. When a jaguar was about to pounce on the moon and rip open her neck, the old man killed the cat with his knife. After that the moon was hungry, so the old man took the moon back to his hut. "We offer you our poverty," said the peasant's wife, and gave her some corn tortillas.*
>
> *The old man had built his hut in a clearing deep in the forest, far away from the villages. He lived there like an exile with his wife and daughter. When the moon returned to the sky she looked down and saw that her friends had no food—they had given her their last tortillas. The moon turned on her brightest light and asked the clouds to shed a very special drizzle around the hut. In the morning some unknown trees had sprung up there, with dark green leaves and white flowers.*
>
> *The old peasant's daughter never died. She is the queen of the mate and goes about the world offering it to others. The tea of the mate awakens sleepers, activates the lazy, and makes brothers and sisters of people who don't know each other.*
>
> *—Guarani legend (after Eduardo Galeano)*

Mate is deeply woven into Argentinian culture, from gauchos to tango to zen teachers. Many jokes, phrases, and metaphors from popular songs relate to mate and how it is drunk: sweet (*dulce*) or bitter (*amargo*), alone, spiced, in a circle, with milk, without milk, etc. Mate is so important economically that it was called the "green gold." During the Colonial period a *manada* of the herb was used to pay off workers—much as coca was used to pay off workers in post-conquest Peru. Poor people have to re-use the same mate many times, spreading and drying the herb in the sun.

Mate idioms

MATE AMARGO (BITTER): *You wish for nothing, you delay in acting.*
MATE DULCE (SWEET): *Friendship. I am glad to see you.*
MATE CON CANELA (WITH CINNAMON): *You interest me.*
MATE CON LIMÓN (WITH LEMON): *I do not want to see you.*
MATE CON LECHE (WITH MILK): *Respectful friendship.*
MATE CON CAFÉ (WITH COFFEE): *I was upset but I forgive you.*
MATE TAPADO (UNDER A LID): *Don't come back. Drink somewhere else.*
MATE MUY CALIENTE (VERY HOT): *I hang on your every word.*
MATE ESPUMOSO Y FRAGANTE (FROTHY AND FRAGRANT): *Reciprocated love.*
MATE CON TÉ (WITH TEA): *Indifference.*
MATE MUY DULCE (VERY SWEET): *You'll be talking to my parents.*
MATE HIRVIENDO (BOILING): *Hatred.*
MATE CON MIEL (WITH HONEY): *Marriage.*
MATE CEBADO POR LA BOMBILLA (THROUGH THE STRAW): *Antipathy.*
MATE FRÍO (COLD): *Scorn.*

The caffeine content of dried mate leaves is one to two percent, about half or two-thirds that of black tea. Tannin levels are lower in mate than in tea, but not by a lot. The young leaves are roasted before being used, much as the North

American Indians did with yaupon. Much of the mate supply in Paraguay and Argentina comes from wild trees.

> *Put a lot of herb in the gourd, so that it is almost filled. Add the hot water, put in the bombilla, and pass the gourd. The tea is astringent and mildly aromatic. The gourd is emptied quickly, but you can keep adding more water. The tea is very strong, so you don't need to drink a lot.*

A number of recent studies have been conducted investigating the use and health effects of mate, and several of these studies link mate drinking with increased risks of upper digestive cancers. One study, of a Brazilian city, found that one-third of the population rarely drank mate, one-third drank mate occasionally, and one-third drank it daily. The researcher found that those from rural areas, those who smoked cigarettes, and those without education tended to drink the largest quantities of mate. As "a large proportion of upper digestive cancer cases in those regions might be due to mate drinking," the researchers suggest that their data could contribute to "preventive intervention."

> *Shucks, and I thought it was the tannins.*

An Uruguayan study has found statistical correlation between bladder cancer and men who both drink mate and smoke black tobacco. Another Uruguayan study found the increased risk of renal cell cancer from mate drinking to be about equal to that of eating red meat, where "increased risk" is purely a statistical correlation. On the positive side, mate has been found to be comparable to ascorbic acid in inhibiting oxidation of LDL cholesterol—not merely a statistical correlation.

The Ally

Making the Rounds

When your luck turns to shit
and falling and falling
it leaves you stranded.
When you're deep in it,
desperate for a way out.

When you have neither faith
nor even yesterday's herb
drying in the sun.

When you tear your shoes
seeking that buck
just to fill your belly.

That's when the indifference of the world
—deaf and mute—
you will surely feel.

—Enrique Santos Discépolo, tr. by Robert Tindall

The Plant, *Ilex guayusa*

The leaves of *Ilex guayusa,* native to the Ecuadorian Amazon, have the highest caffeine content of any known plant. Along rivers in the Oriente, such as the Napo, the Tigre, the Pasta, and as far north as the Putumayo, the Indians dry the leaves and string rolls of them on a long piece of twine. Guayusa tea is considered a tonic for the heat, a property for which I can vouch, and jungle mornings seem incomplete without it. The taste is mild and pleasant—guayusa is not high in tannins as is tea.

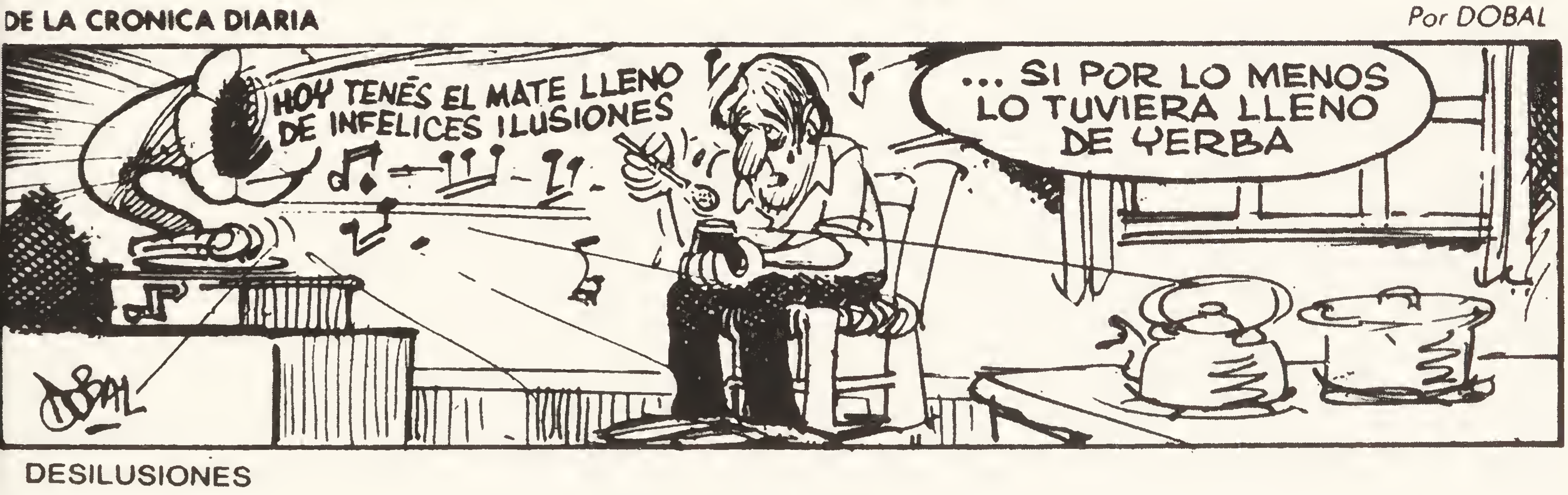
The use of guayusa is ancient. The Jesuits exploited the plant in the seventeenth century as a medicine. Richard Evans Schultes, along with Andrew Weil and Enrique Hernández, discovered a very old guayusa plantation near the small town of Pueblo Viejo, of large trees of great age. Schultes believes that it is the same plantation described by a Padre Serra in 1756.

As with *Ilex vomitoria,* guayusa is sometimes used as an emetic, mothers training their children by tickling their throats with a feather. In addition to its tonic and emetic qualities, guayusa is also recognized as a diuretic and a diaphoretc. Shamanically, the plant is used as an aid to dreaming, and is sometimes added to ayahuasca in place of, or in addition to, *Psychotria viridis..*

The Plant, *Paullinia cupana*

Guarana is prepared from the seeds of the *Paullinia* plant. The seeds are roasted, and then ground into a powder, which is mixed with water into a paste, and then molded into a hard cylindrical cake. The dried paste contains 2.5 to 5% caffeine, originally named "guaranine," along with tannins, theobromine, theophylline, xanthine, saponins, and a little-studied essential oil named guanine, reputed to be an aphrodisiac. The Amazonian Indians use guarana as a stimulant for hunting.

Some German researchers at Köln (Benoni, et al, 1996), investigated the essential oil of guarana, wondering if perhaps the estragole and anethole in guarana were being aminated *in vivo*, and the metabolite, 4-methoxyamphetamine, responsible


DE LA CRONICA DIARIA
Por DOBAL
HOY TENÉS EL MATE LLENO DE INFELICES ILUSIONES
... SI POR LO MENOS LO TUVIERA LLENO DE YERBA
DOBAL
DESILUSIONES

"DISILLUSION" FROM DOBAL'S DAILY CHRONICLE IN THE NEWSPAPER CLARÍN.
PHONOGRAPH: TODAY YOUR MATE IS FULL OF UNHAPPY ILLUSIONS.
MAN: JUST SO LONG AS IT IS FULL OF HERB.

for some of guarana's alleged activity. They found no 4MA in the urine of subjects taking guarana, and concluded that neither estragole nor anethole were psychoactive. They may be right, but there is a small *non sequitur* in their reasoning: the oils may have activity through another mechanism, or to one or more of the several other constituents of the oil.

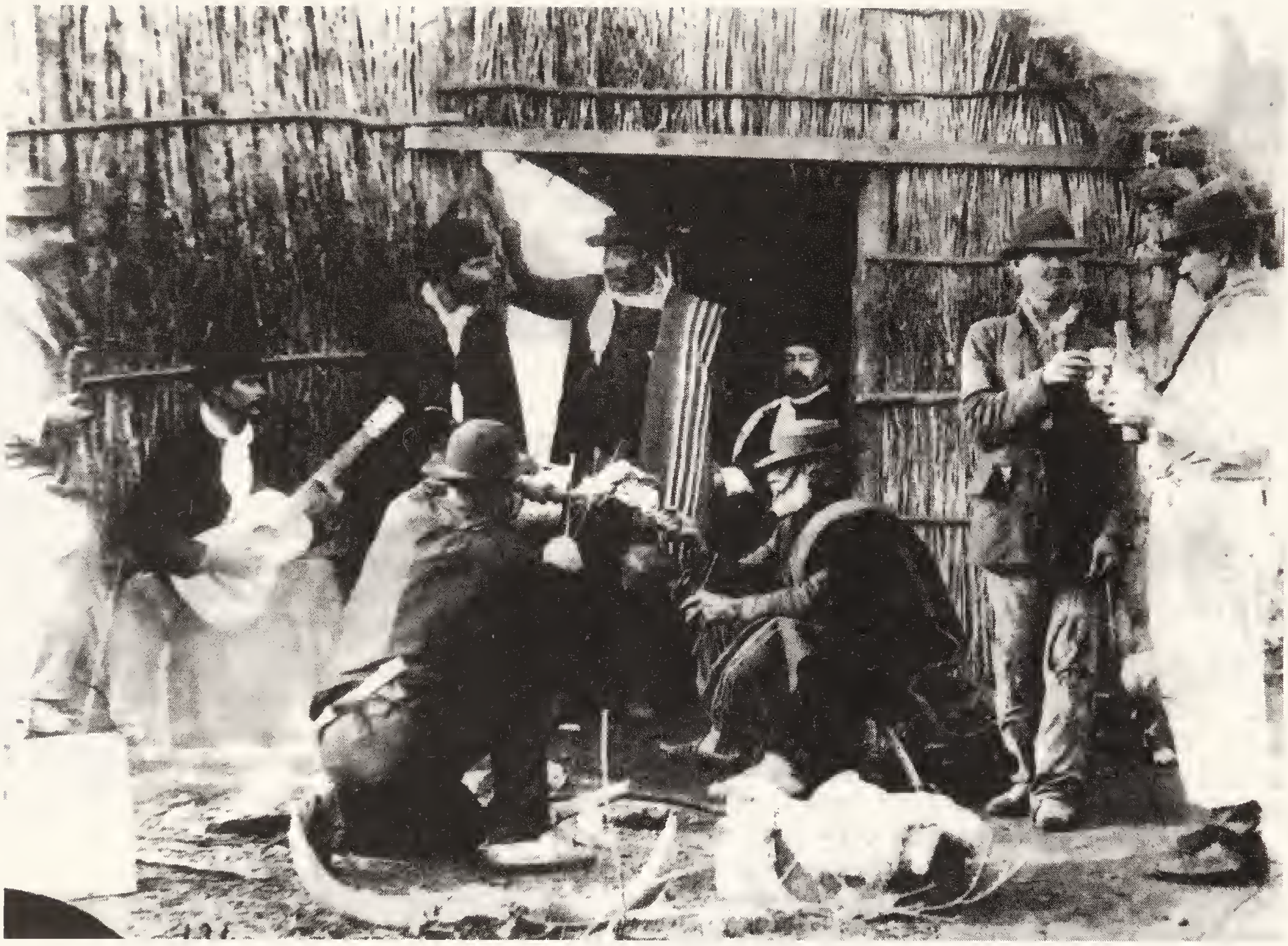
Accumulating evidence suggests that tannins are carcinogenic and contribute to poor protein assimilation. While most of this evidence comes from studies of betel nut chewing, an article in *Basic Life Science* warns that users of guarana and kola could face similar dangers. The danger from tannins in tea, which are quite high, are mitigated by drinking it with milk. A number of other recent studies specifically on guarana (Mattie et al, 1998; Santa Maria et al 1998; Espinola et al 1997) found very low toxicity from guarana in laboratory animals.

The guarana plant is said to have sprung from the corpse of a son born to a wise female shaman who copulated with the snake god. The boy was slain by a jealous brother, and it was the tears of the slain boy's mother that germinated the liana. Similar myths are told about the origins of coca, and, in the West, the vegetation myths of Adonis and Tammuz. Shamans wishing to contact the great medicine-woman ingest large quantities of guarana.

In Brazil, guarana is sold as pills and in capsules, as well as in a popular soft drink. Guarana soft drinks have begun appearing in the United States. Various medicinal properties are ascribed to guarana: nervine, tonic, as relief from migraine and menstrual headaches, for neuralgia, and as an aphrodisiac.

The Ally

Subjectively, both stronger and more diffuse than coffee, more like a quid of coca leaves. It is difficult to account for the strength of the effects from the caffeine content alone.



MATE DRINKERS

COLA NITIDA

Common names Kola. Goro (in Hausa).

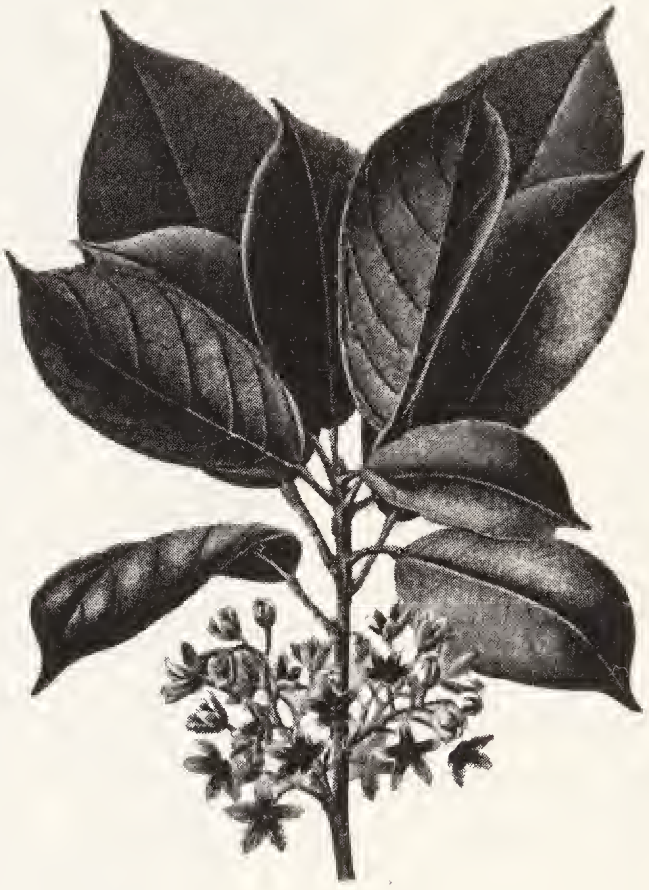
Related species *Cola acuminata.*

Taxonomy In the cocoa family, the Sterculiaceae.

Part Used The nut. The wood is valuable for carpentry and shipbuilding.

Chemistry According to James Duke, the nuts of *Cola nitida* average 3.5 percent caffeine, and 1 percent theobromine (which is a lot). *Cola acuminata* contains less caffeine and only small amounts of theobromine. It is likely that other constituents of the nut contribute to the euphoric and "narcotic" effects.

Louis Lewin reports that animal studies indicate that kola is a more effective energizer than pure caffeine, yet concludes that it is the caffeine that is principally responsible for the activity.



COLA NITIDA, STARKS, 1981

Kola nuts used to be favorites of Alpine mountaineers, it being said that they increased muscular strength without undue mental stimulation. Today mountaineers more often take chocolate-covered coffee beans.

How Taken Chewed. And like betel, the red juice stains the teeth.

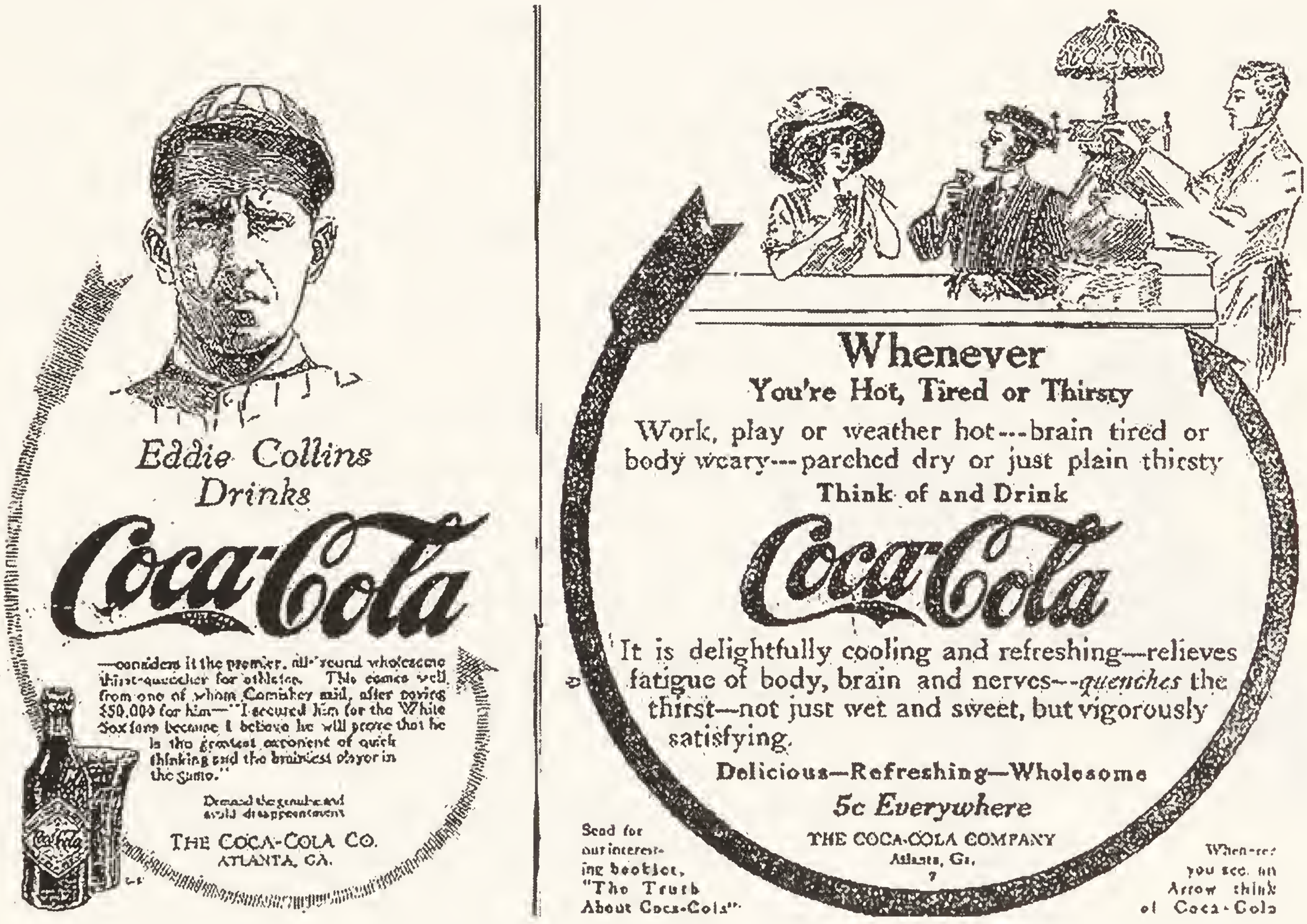
Effects

> *It is better for your life, so my people tell me.*
> *It prolongs your life, for the chewer has said it.*
> *After prolonging your life, you get the blessing of*
> *health for the body and then wealth.*
> *Afterwards, you would never enter hell;*
> *But have all the goodness of Paradise forever.*
>
> —*The Book of Kola, Kitab fawa-idul*

The Plant Kola is called "the coffee of the Sudan." There are numerous species of *Cola,* but *Cola nitida* is the preferred source of the prized nuts, with *Cola acuminata* the second choice. Kola nut was one of the original ingredients, in 1886, of that imaginative and remarkable herbal preparation called Coca-Cola. The bitter taste of the nuts along with the slightly anaesthetizing properties of the coca probably made a very tasty combination. Today Coca-Cola contains only such token quantities of its two namesakes as the company's lawyers feel are necessary to protect the trademarked name of their product. Calculating from the most believable of the several purported "recipes" from industry journals and the internet, there is probably about one six-thousandth of a kola nut in an eight ounce serving of Coca Cola (and about one milligram of decocainized coca leaf). The kola taste is simulated with citrus oils, cassia, and a trace of neroli, and by adding U.S.P. caffeine (pharmaceutical grade, United States Pharmacopoeia).

I used kola nut extract in my "Osceola Creme Cola," which was an excellent herbal soda. I could use some right now. I've heard that kola is still the basis of Wellcome's Forced March Tabloid, available in Great Britain.

The nuts have been harvested and traded around West Africa and the Sudan for at least a millennium. Cultivation of the tree spread gradually eastwards from the mountains of Sierra Leone and Liberia to the Volta and finally into Nigeria. Muslim traders from Mali monopolized distribution early in the fourteenth century and helped spread the nuts to the western Sudan and even into North Africa. The Portuguese arrived in the fifteenth century and traded kola nuts along the west African coast. In the interior, kola nuts moved by camel caravan.



Eddie Collins Drinks

Coca-Cola

—considers it the premier, all-round wholesome thirst-quencher for athletes. This comes well from one of whom Comiskey said, after paying $50,000 for him—"I secured him for the White Sox fans because I believe he will prove that he is the greatest exponent of quick thinking and the brainiest player in the game."

Demand the genuine and avoid disappointment

THE COCA-COLA CO.
ATLANTA, GA.

Whenever
You're Hot, Tired or Thirsty

Work, play or weather hot---brain tired or body weary---parched dry or just plain thirsty

Think of and Drink

Coca-Cola

It is delightfully cooling and refreshing—relieves fatigue of body, brain and nerves---*quenches* the thirst—not just wet and sweet, but vigorously satisfying.

Delicious—Refreshing—Wholesome

5c Everywhere

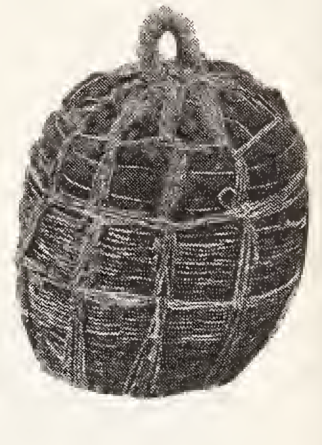
THE COCA-COLA COMPANY
Atlanta, Ga.

Send for our interesting booklet, "The Truth About Coca-Cola".

Whenever you see an Arrow think of Coca-Cola

COCA-COLA AD, C. 1915

A dose of kola is less than one nut, so the nuts are usually split and shared, reinforcing the social aspect of kola chewing. Throughout their history kola nuts have been expensive items of prestige, and there are parables and warnings of how a kola nut habit can impoverish a family.



AFRICAN KOLA NUT BASKET

The Ally

Kola, tree of Gonja.
Worth great sums of money,
The product of Asante,
Anyone who becomes addicted to you
Will never stop paying money.
Anyone who trades in you
Will stumble and fall
Until he dies in destitution.

—an African poet on pilgrimage to Mecca, 1911

Signatures

The Hausa peoples claim that kola is an aphrodisiac for women and a specific for erectile dysfunction in men. Kola was also said to make one wiser, to protect one against sorcery, to improve self discipline, and to have the power to cure a broken heart,

We accept kola as a gift even if only a piece.
The two good halves are very special indeed.
As for the pieces, they are more than sufficient,
For he who gives either is of high standing
and will be rewarded.

—Imam Imoru, "Kitabul Mas-alati Tanbul"

Kola, or "goro," is so associated with business and social exchanges that a secondary meaning of *goro* is "bribe."

The Igbo in Nigeria celebrated the new millennium with a shrine decked with white cloth and bowls of kola nuts and white chalk, and of course drumming and dancing. Thirteen different towns in the Imo River area rotate the hosting of New Year festivities. The Igbo have a saying: "The Yoruba produce kola, the Hausa chew it, and the Igbo celebrate it."

Kola nuts are important traditional ceremonial gifts, especially at rites of passage such as birthdays, marriages, and funerals. When a Nigerian friend of mine wanted to marry his mother (it's a long story—this was to save her from her second husband and to bring her back into his father's clan), he brought gifts of palm wine and a kola nut on his mission to make arrangements with the family involved.

Slightly sweet, overtones of lime,
A pleasing bitter, to soften the time.

ARECA CATECHU
PIPER BETLE

Common name Betel.

"betel" < Portuguese "betle" < Malayam "vittila."

Hindi *Pan,* mainly refers to the leaf. The areca nut is *supari*. Thus the quid is *pan-supari. Seroti,* also Hindi, refers to the betel cutter.

In Thai the betel leaf is *plu* and the areca nut is *mak*. In Sinhala, the leaf is *bulat,* and the nut is *puvak.* In Malay and Bahasa Indonesia, the leaf is *sirih,* and the nut is *pinang,* which word was borrowed into Chinese as *pin-lang.*

Taxonomy Betel is the leaf of *Piper betle,* a creeper of the pepper family. Black pepper, *Piper nigrum,* and kava, *Piper methysticum,* are in the same genus. *Areca* is a palm tree.

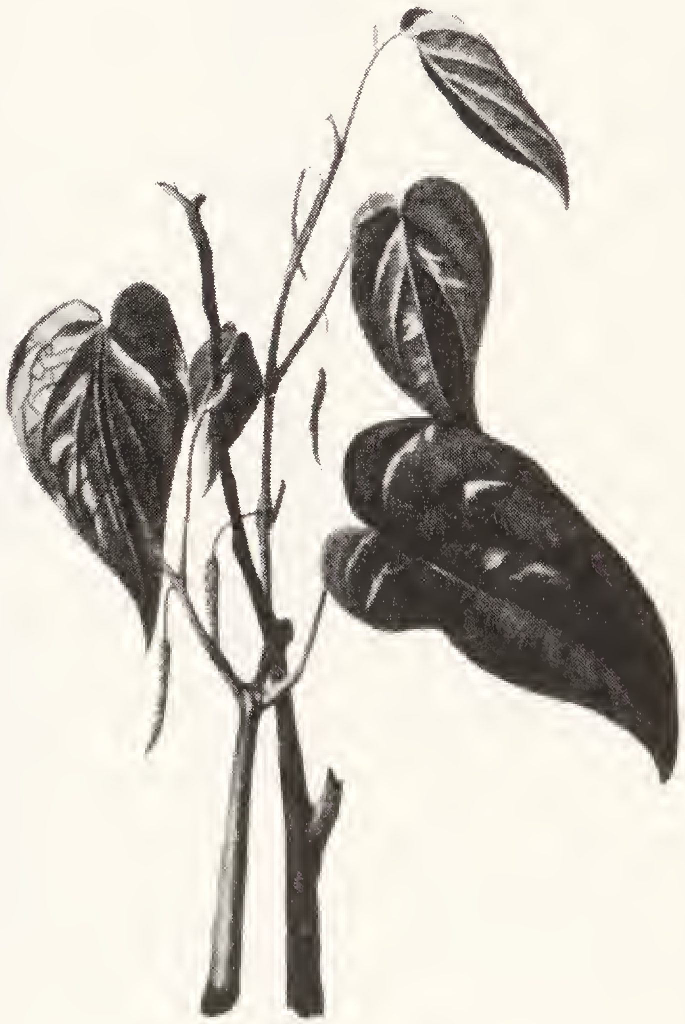
Part Used Betel quids are composed of two plants, *Areca catechu* and *Piper betle.* The nut of the betel palm is chopped into small pieces and, along with lime paste and spices, folded up into a triangular packet in a fresh *Piper betle* leaf. The packet is chewed and kept in the cheeks or behind the lips.

Effects Gives energy, assuages hunger, eases pain. Accordig to Sanskrit texts, betel is pungent, bitter, sweet, spicy, and salty. It expels wind, kills worms, removes phlegm, subdues bad breath, induces passion, and beautifies the mouth.

As much as black teeth are beautiful.

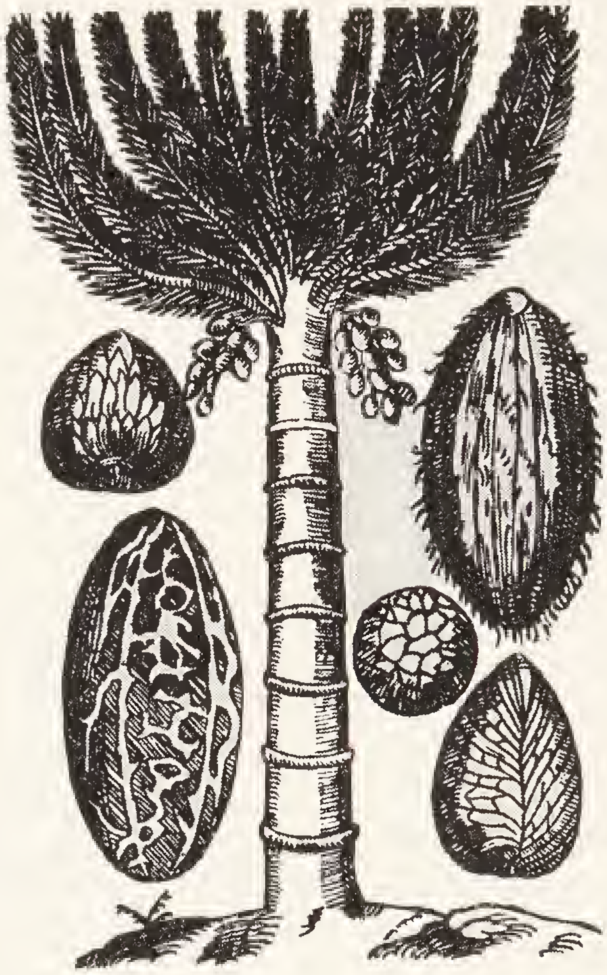
The Plant The oldest archaeological evidence for betel use in northwest Thailand, where traces of both *Piper betle* and *Areca* have been uncovered in a cave at levels dated between 7000 and 5500 BCE. Conforming to the pattern that been gradually emerging from so many plants in both this book and *Pharmako/Poeia*, once again it seems that the drug plant was cultivated before the food plant.

Duh!



PIPER BETLE,
STARKS, 1981

Other early sites are in the Philippines and in Timor. It seems likely that betel originated in Southeast Asia and spread from there to India and southern China.



JACOBIUS, ARECA PALM, 1613

Effects Salivation. First-time users often swallow the juice and get dizzy.

History

> *A Vietnamese story tells of two twin brothers, Tan and Lang. They looked so similar that no one could tell them apart. A wise elder served them a single bowl of rice, and when Tan ate first, the Elder knew that he was the first-born, and married him to his daughter. Lang was so lonely without his brother that he took to wandering, until one day he died on the bank of a river and was transformed into the areca palm.*

Effects Louis Lewin called betel "a mild excitant with narcotic and stimulating qualities." Though he seems to have a low opinion of the chewing habit, he considered betel safer than tobacco or alcohol, and acknowledged that that habit was ideally suited to the tropical regions where it is common, both protecting the chewers from parasites and providing important nutritional nitrogen, otherwise mostly absent in the native diet.

Lewin estimated the number of betel users to be around 200 million in 1930. It is undoubtedly larger today.

The Ally

> *Bloody Mary's chewing betel nut*
> *And ain't that too damn bad.*

The Plant Chewing betel turns the saliva bright red, and eventually stains the teeth black. In former times this was regarded as a mark of distinction. While betel is traditionally said to sweeten the breath, many reports cite just the opposite condition—a fetid odor perhaps caused by rotting bits of quid stuck between the teeth and never cleaned out.

History

> *Tan searched everywhere for his missing brother. One day, on the bank of a river, he slipped and struck his head on a tree that was growing there. He died and was changed into a boulder of limestone.*

Chemistry Areca nuts contain the alkaloids arecoline, arecaine, arecaidine, arecolidine, guvacine, and others. Betel leaves contain chavibetol, chavicol, cadinene, and a host of other compounds. According to Duke (1985), the oils from the leaf are antioxidant and antiseptic.

Effects Betel chewing is widely blamed for plaque buildup, gum disease and dental caries. This, however, has been contested by some local dentists in Southeast Asia.

Betel chewing is also associated with a highly elevated risk of mouth or esophagal cancer. It is not clear how much of this correlation is due to the tobacco which is now commonly added to the quid.

History

> *Tan's wife listened and waited for any news of her husband and brother-in-law. Finally she heard that they had both died by the edge of a river. She went to the place and lay down in grief on a large rock she found there. She was so lonely that she died and was changed into the betle creeper, draped over the rock and clasping around the tree.*

Poesis Some skill is required to fold a good quid. Ingredients vary widely. It is vital that the leaf, at least, be fresh. I had made several attempts on my own, just with chopped nut, a packaged leaf, and a little lime. It was awful. What a difference when I finally got a ready-made. Full of spices and honey, the leaf fresh and fragrant, the nut slices soft. And the effects were trebled. I think the euphoric part comes from the leaf, and the stimulating part from the nut.

BETEL POUNDERS

The Plant

On Taiwan, the prevalence of betel palm plantations on steeply sloping hills has created a significant erosion problem. The Taiwanese government instituted a program to buy out the farmers with plantations on slopes of more than 30 degrees, but have had limited success due to the highly lucrative value of the crop, where the price of a single betel nut is the same as a dozen eggs. Officials estimated that nearly 20% of the 57,000 hectares of betel plantations on Taiwan are on such slopes.

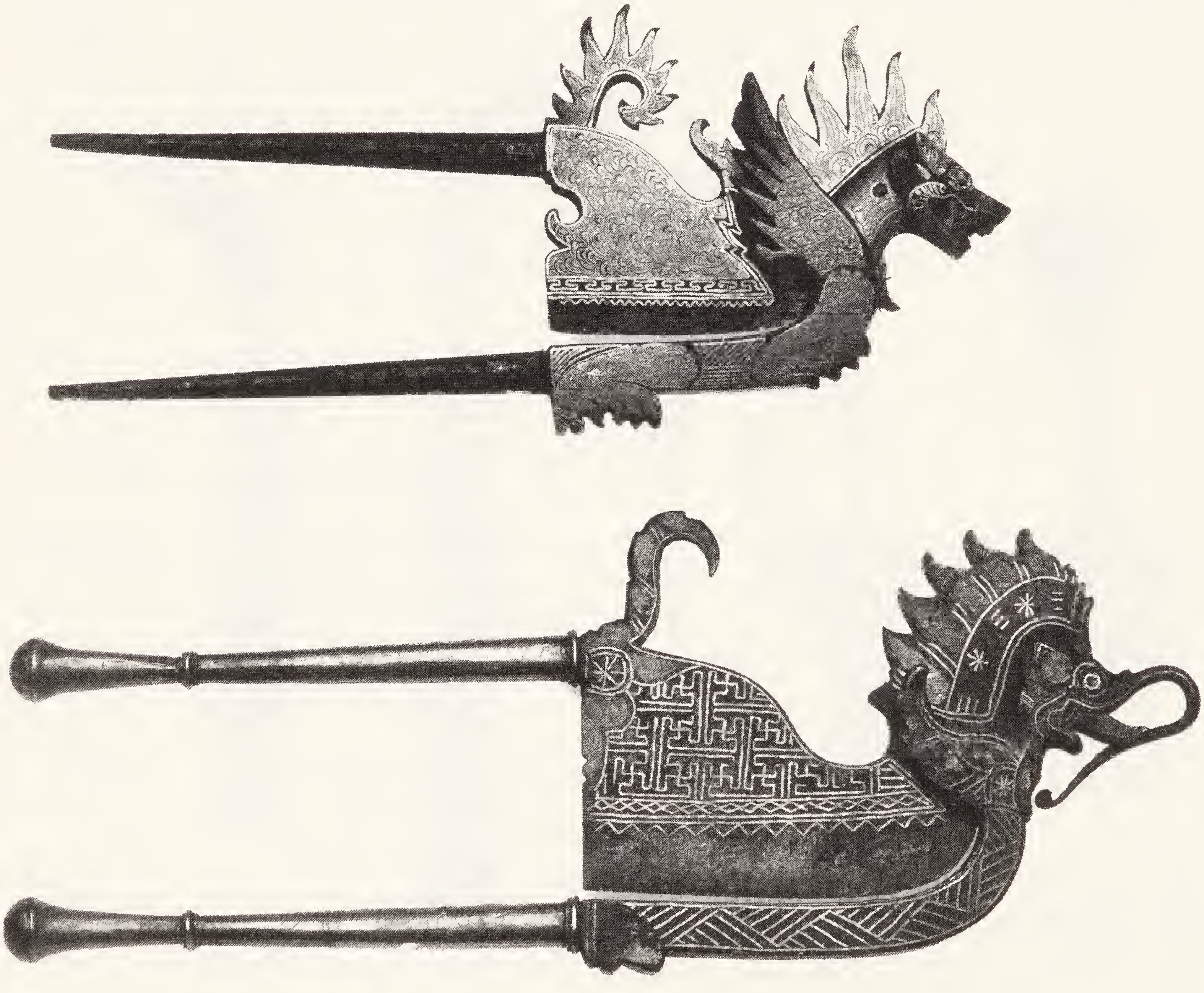
History

> *When the villagers came to the riverbank, they tried chewing the leaf and nut that were growing there. When they spat on the rock and it turned blood red, they said that the red color was from the power of the love that had brought them all there.*

The Ally

How can so many hundreds of millions of people be addicted to something that does so little?

> *That's not fair. It's an acquired taste. I like it for gardening, so it's easy to spit.*
>
> *Yeah, but you only chew one quid. A real betel chewer can go through three dozen in a day.*



BETEL CUTTERS

Effects A study in Palau, reported in the British Journal of Psychiatry, found that betel chewing was beneficial in reducing the symptoms of schizophrenics. Betel chewing was also correlated with less use of other drugs, especially cigarettes.

Poesis The paraphernalia associated with betel chewing are extraordinarily beautiful. The most striking are the cutters. These are hinged devices much like nutcrackers, with a short blade mounted near the fulcrum, used to cut up the areca nuts. Cutters, often of silver or brass, or of steel with gold and silver overlay work, are cast into a wide variety of forms, including reclining goddesses and dakinis, stags, chickens and other birds, and mythological figures such as garudas.

In addition to the cutters, there are brass containers to hold the leaves, smaller containers for the lime, boxes for the nuts, trays for serving the quids, tiny mortars for chopping the ingredients still further, and, not least, spittoons.

In many parts of Southeast Asia, it is customary for one to always carry his own lime, while serving the other ingredients is a mark of ceremonial hospitality. In Malaysia, betel serves a traditional role in courtship and marriage rituals. When the family of a prospective groom visit the family of the intended, the two families chew betel and speak of other matters until the actual purpose of the visit is clear. At this point, if the betel container is accidentally overturned, it is a sign to the visitors that the matter should not be pursued. Similarly, on the wedding night, a betel container is left outside the door of the marriage chamber. If it is overturned in the morning, it means that all did not go well and that an annulment, along with a great deal of trouble and ill will between the families, may be unavoidable.

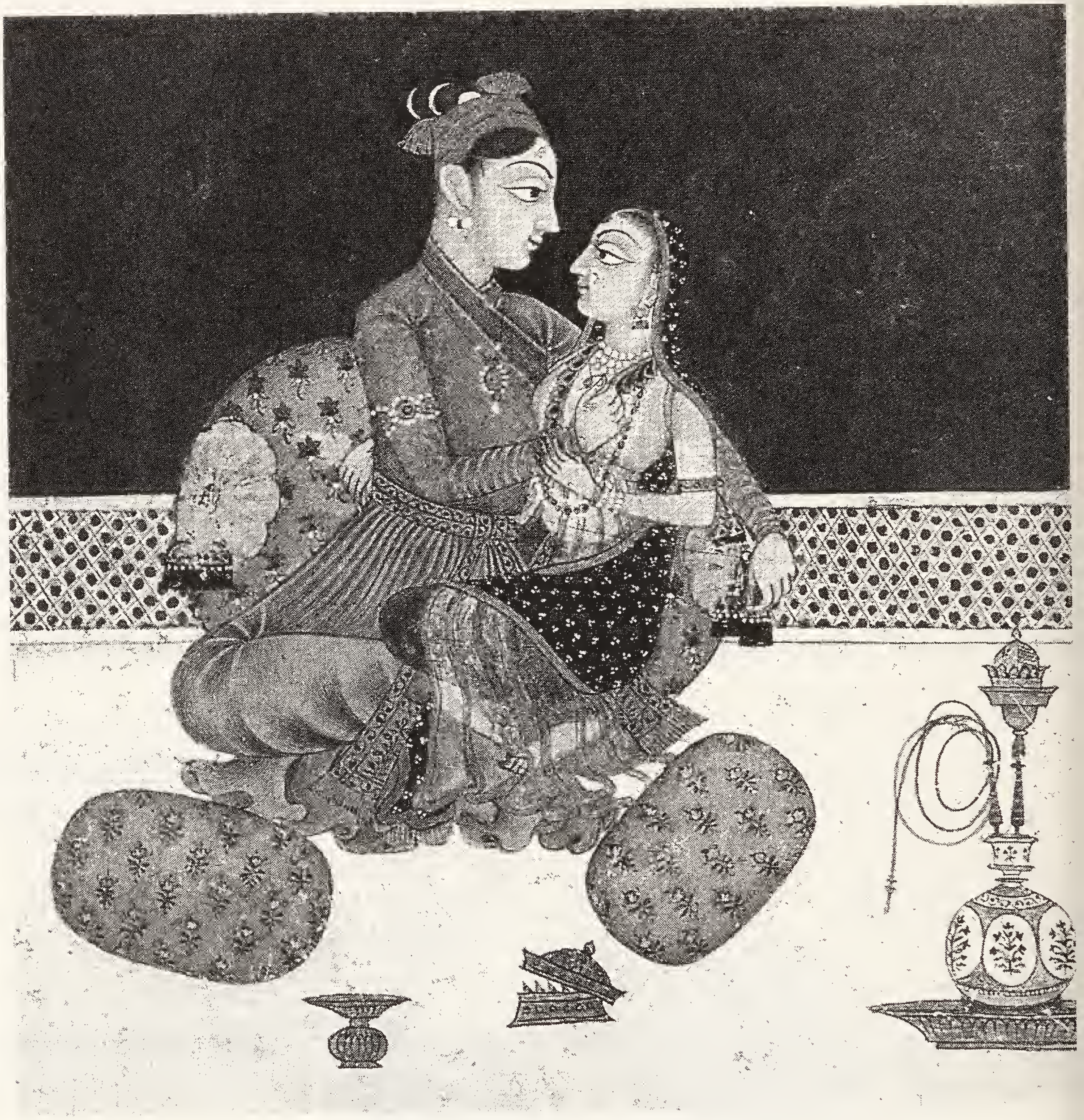
In India betel has a prominent role in many marriage ceremonies, and the finest set of containers, trays, and cutters are set beside the marriage bed.

Class Charismatica. That which makes you feel empowered, centered, and important, by yourself and others.

The Ally

He took and tasted, a new life
flowed through his renovated frame;
His limbs, that late were sore and stiff,
Felt all the freshness of repose;
His dizzy brain was calmed,
The heavy aching of his lids
At once was taken off;
For Laila, from the bowers of Paradise,
Had borne the healing fruit.

—*Thalaba*



LOVERS EQUIPPED WITH SPIṬTOON, PANDAN (BETEL BOX), AND HUQQA (WATER PIPE), BILASPUR, ABOUT 1730–1740

HECATE'S GARDEN

Love and strife, Empedocles said. An ivory canine, or the peacock's tail: natural selection and sexual selection. Hecate's enchanted garden. She who birthed the vine, *Trioditis:*

> *the meeting of three roads.*

Angel messengers, terpenes and alkaloids, serotonin receptors on platelets, like olfactory sensing on protozoa. Pheromones. Salts and oils.

> *Smell is the first of the senses.*

Some messages get misdelivered, the names of the addressees spelt so similarly.

> *Come close. Stay away. I love you. Eat me and die.*

And the primal atmosphere, likewise internalized. Nitric oxide in the synapse, enemy nerve gas coopted, given a work permit in a Precambrian armistice and employed.

The nervous system is distributed, thousands of receptor types, hundreds of thousands of mediating chemicals.

> *Love and strife, angels terrible and sweet.*

Some messages are like interoffice memos, acetylcholine between cells. Others are transmissions from the Foreign Office, tannins, meant for other species. Jasmonic acid. Some messages are false: disinformation created to confuse and subvert. Protease inhibitors. Some are love letters to other life forms, or imperialistic saber-rattling, like a phylum-wide Monroe Doctrine.

Plants to animals, or interactions with the environment. Carbohydrates oxidizing. Secretions of GABA.

> *It's NOT all in your head.*

The "brain" in that jar of formaldehyde is not all there—look closely and you will see that it has been severed.

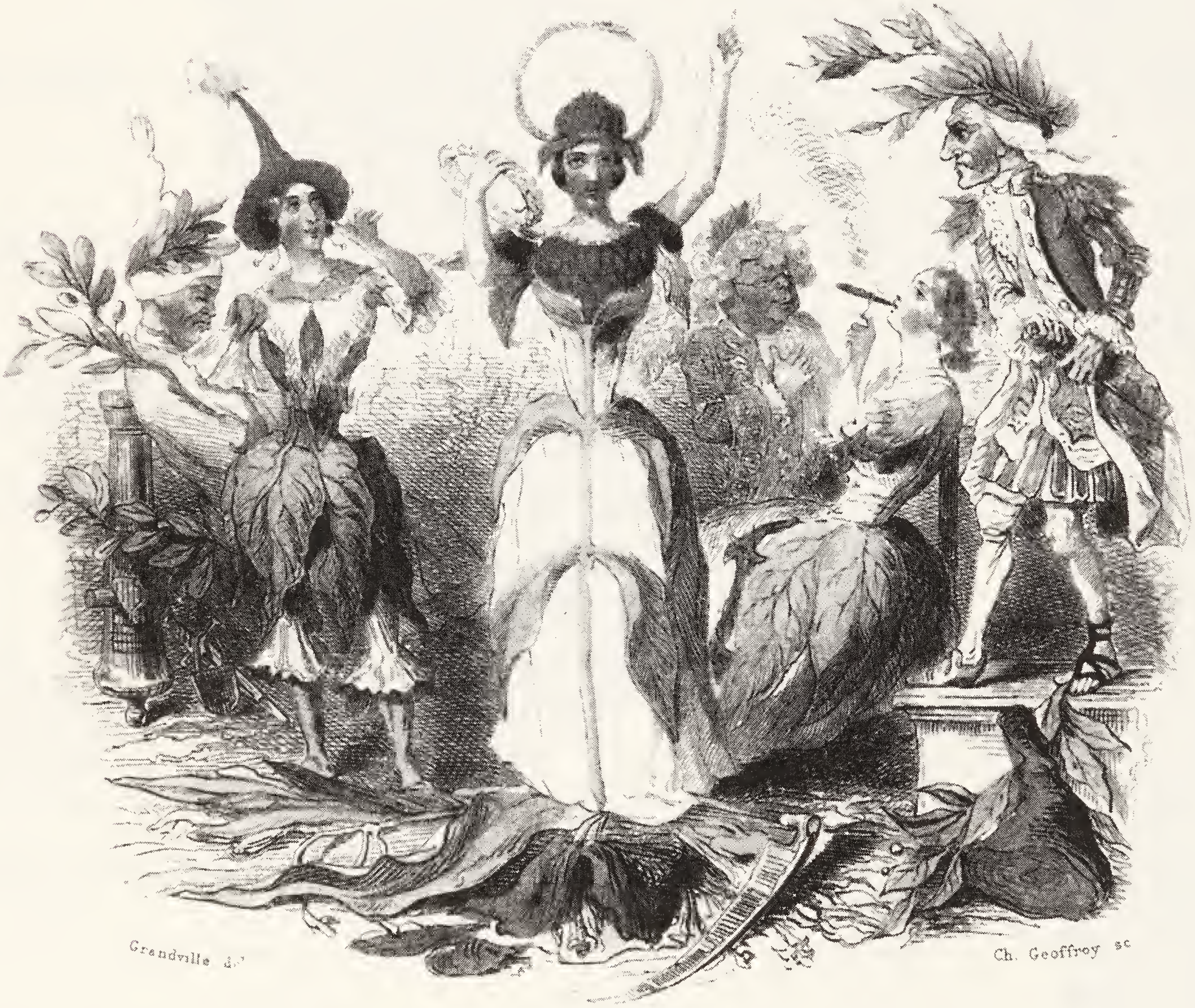
The real brain extends to fingertips, to genital surfaces, across synapses, through capillaries, veins, neuroreceptors lining the gut, covering platelets, carried by messengers through skin pores. Or inhaled, or ingested, or excreted.

Winds and ocean currents are intersynaptic fluids.

This, your own brain, buzzing with state transitions, energy captured through electron transport chains in green chloroplasts, from photons radiated, ninety-three million miles away in a great star, itself interacting and resonating with cosmic fields and galaxies.

& that's just the brain,

laughs the Mind.



FROM J.J. GRANDVILLE, LES FLEURS ANIMÉES, 1847

EPHEDRA SINICA

Common names

Ma huang (literally, "yellow hemp"). Joint fir. Mormon tea.

Related species

Ephedra vulgaris, and *E. equisetina* are two other important Asian species. *E. equisetina* is the major natural source of ephedrine. *Ephedra nevadensis, E. californica, E. viridis, E. funerea, E. trifurca,* and *E. fasciculata* all grow in arid regions of western North America. These are all loosely called "Mormon Tea," or Popotillo. *E. nevadensis* is reported to contain little or no ephedrine. However, as the alkaloid content of *Ephedra* species vary considerably by season, being highest in the fall, I'm not sure the reported phytochemistry is definitive. At least one (unidentified) California species tested on the trail by bioassay contains palpable quantities of alkaloid. Thirty-three other species are found in South America, the Mediterranean, and Asia.

Taxonomy

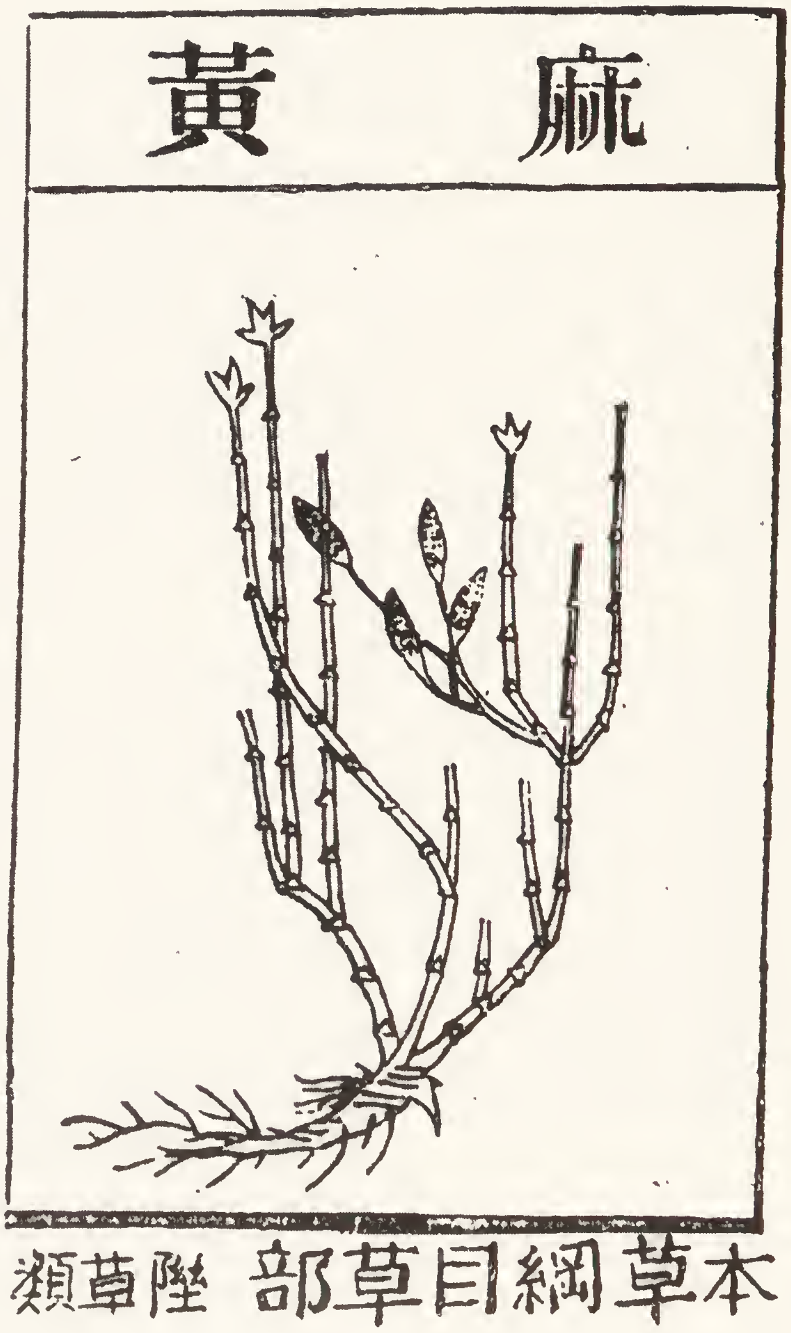
Ephedra is more closely related to pine trees than to the vascular plants. *Ephedra* is dioecious, the male fruit is a tiny cone, the female fruit is a berry enveloped by bracts.

Part Used

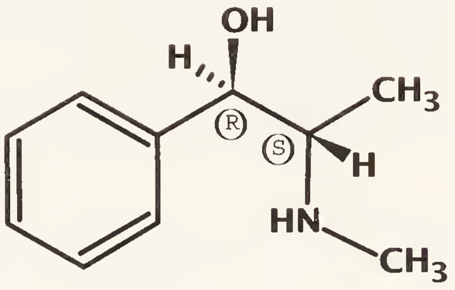
The whole plant, steeped briefly into a golden medicinal tea for asthma, colds, or hay fever, or steeped longer for the stimulating effects. Or the extracted alkaloid, as a pill. Or the synthesized alkaloid.

Chemistry

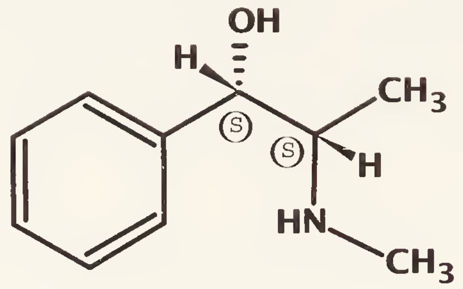
Both ma huang (*Ephedra sinica*) and *E. equisetina* contain high levels of ephedrine—up to three percent—as well as some pseudoephedrine. Several Central Asian species (*E. intermedia, E. distachya, E. procera*) contain lesser amounts of ephedrine, around 0.5 to 2.2 percent. Pseudoephedrine is not really "false" ephedrine, it's an isomer. Ephedrine has two chiral centers: therefore, there are four possible isomers. The two naturally occurring isomers are *l*-ephedrine (1R,2S), and *d*-pseudoephedrine (1S,2S), where the



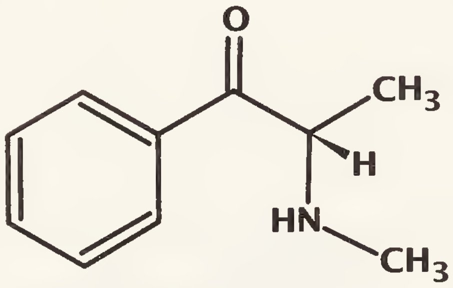
PEN T'SAO KANG MU WOODCUT



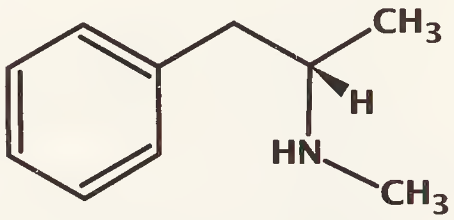
(1R,2S)-(-)-ephedrine



(1S,2S)-(+)-pseudoephedrine



(S)-(-)-methcathinone



(S)-(+)-methamphetamine

+ indicates dextrorotatory, and the -, in this case, levorotatory. Note that these are two distinct molecules: they are diasteriomers, not enantiomers (mirror images), and have different chemical properties. The enantiomer of *l*-ephedrine would be *d*-(1S,2R)-ephedrine (not shown). As a mirror image of *l*-ephedrine, *d*-ephedrine would have exactly the same melting point as *l*-ephedrine, and mostly the same chemical properties (though racemic ephedrine has a different melting point). Their biological properties, however, are not the same: the naturally occurring isomers are more active. Pseudoephedrine is much less potent as a CNS stimulant than ephedrine, and is used mostly as a nasal decongestant and as a base for synthesizing methamphetamine.

Effects Truckers like ephedrine (when they can't get amphetamine). Unlike caffeine, ephedrine is not diuretic.

Pharmacology Ephedrine stimulates both the central nervous system and the sympathetic nervous system. It is an adrenergic agonist, and stimulates the release of norepinephrine. There are two types of adrenergic receptors, alpha and beta, and several sub-types. α-Adrenergic agonists affect the smooth muscles. They stimulate local vaso-constriction, reduce nasal congestion, increase vascular resistance, and, generally, raise blood pressure. The smooth muscle stimulation and concomitant vaso-constriction can induce a marked resistance to urine flow and the ability to reverse priapism, erection being a relaxation event. α-1 agonists work by mimicking norepinephrine. α-2 agonists modulate the presynaptic release of norepinephrine and epinephrine and are useful for hypotension.

β-Adrenergic agonists promote pulmonary bronchodilation, thus increasing air flow for flight or fight situations. β-1 agonists stimulate the heart, an effect that is increased by the presence on an MAOI (monoamine oxidase inhibitor). β-2 agonists particularly affect pulmonary muscles, thus their usefulness for relieving asthma, but can affect the skeletal smooth muscles generally and hence can cause tremors. Ephedrine is a weak α-agonist and a medium agonist of β-1 and β-2 receptors. For comparison, cocaine is a weak β-1 and β-2 agonist and a medium α-agonist. Amphetamine is a strong agonist of all three types.

Thus, ephedrine stimulates the heartbeat and cardiac output, variably increases peripheral resistance, and usually increases blood pressure—though, because of the complexity of the feedback loops in the cardiac/vascular system, the opposite can happen. The half-life of ephedrine is three to six hours. It is excreted mostly unmetabolized.

Becuase it is a "warming" herb, Chinese herbalists usually do not give *Ephedra* for summer colds, nor for bronchitis accompanied by thick, yellow mucus. Herbalists sometimes mix *Ephedra* with a cooling herb, to counteract its warming quality. Other contraindications for ephedrine or ma huang are high blood pressure, nervousness, anxiety, insomnia, and, especially, any history of cardiac arrhythmias. Ephedrine is also contraindicated for persons with diabetes, thyroid trouble, or enlarged prostate.

> *"People who have heart disease, high blood pressure, diabetes or thyroid trouble or difficulty in urination due to enlarged prostate gland should take this preparation only on the advice of a physician,"* the package says.

Nor should *Ephedra* be combined with MAOIs (however, see below for the relevance of just this combination in the *soma/haoma* discussion). Tests combining ephedrine with moclobemide, a reversible monoamine oxidase-A inhibitor, found a two to four-fold potentiation of ephedrine's effect on blood pressure, and a 0.6 potentiation of ephedrine's effect on heart rate. The most common adverse reactions were palpitations and headache. Interestingly, similar results were found for tyramine and moclobemide.

Combining moclobemide with SSRIs such as fluoxetine did not produce any indication of serotoninergic syndrome. As harmine and harmaline are also reversible MAO-A inhibitors, it is reasonable to expect similar results with either of these two alkaloids. Generally, it is MAO-B inhibitors that affect phenethylamines, while MAO-A inhibitors affect tryptamines. It is known, however, that MAO-A is involved with epinephrine—even though a catecholamine is basically a phenethylamine. Since tyramine is also a phenethylamine, other potentiations of certain phenethylamines by MAO-A inhibitors are to be expected, even if the general rule that MAOIs do not potentiate peripheral sympathetic stimulation holds.

Ephedrine and caffeine mutually potentiate one another's amphetamine-like stimulus effects.

How Taken As a hot tea, or as a ritual beverage with milk and a sacrifice. The tea is made from one-half to one teaspoon of herb per cup. As a decongestant, only steep the herb until the tea is a golden yellow. For a stimulant, steep the herb longer. Good ma huang tea has a sweet, faintly resinous scent. A cup of ma huang tea will contain ten to fifty milligrams of ephedrine alkaloids, depending on how long it is steeped. As a reference, over-the-counter asthma preparations such as Primatene®, contain around 50 mg. of ephedrine in an adult dose.

Effects I find that the CNS effects are discernible in even very small doses—before the body-load kicks in. A friend reports that he prefers *Ephedra* over coffee for writing, that he is less jittery than on caffeine, and that the come-down is gentler.

Many report that *Ephedra* is an aphrodisiac.

Nooners. Or afternooners.
Spontaneously imagined scenes . . .
Suburban sin,
or an after-hours quickie.

A woman liked the way it made her nipples hard. Men, using a pencil metaphor, say that *Ephedra* "gives good lead." A double-blind study by Meston and Heiman (1998), using both subjective reports and "vaginal photoplethysmography" found that fifty milligrams of ephedrine sulfate "significantly facilitated" physiological sexual arousal in women, and stated that ephedrine might have value in the management of female sexual dysfunction.

DETAIL FROM MAX ERNST, UNE SEMAINE DE BONTÉ, 1934

The Plant *Ephedra* is called "joint fir." The family is monogeneric, and evidently of ancient lineage, as their distribution in the Old and New Worlds is fairly uniform. The stems are jointed, and bear a superficial resemblance to horsetail. The leaves are reduced to bracts at the joints, so, in general appearance, *Ephedra* is a leafless plant. Most of the North American species are desert shrubs. In Asia, several of the ephedrine-rich species grow in high mountains. Most *Ephedras* are much-branched from a thick central stem. Some of the montane species are more like small trees and have a sweet, piney aroma. The berries on the female plants are bright red, and on *E. sinica* are as large as grapes. Traditional Chinese herbalism reports opposite effects from different parts of the plant, the roots and the nodes lacking the warming and stimulating qualities of the internodal stems. The alkaloid content of the plants varies considerably, both seasonally and from ecological factors.

The geographical distribution of Central Asian species of *Ephedra* is summarized by Nyberg (1997). *E. equisetina* is found on high montane slopes in the Caucasus, Dagestan, the Kopet-Dagh in Turkmenistan, and across Central Asia to the Pamirs and the Tien Shan. *E. intermedia* is found in much the same area in the lower montane zone. *E. procera, E. gerardiana,* and *E. intermedia* are found in the Hindu Kush and in Baluchistan. *E. distachya L.* (synonyms are *E. vulgaris, E. monostachya, E. botryoides, E. dubia, E. stenosperma)* grows in the steppes and semi-desert areas from the Ukraine, the Southern Urals, and the Caspian Sea to Western Siberia.

> *You're getting very dry, and are using the passive voice.*
> *Have you drunk* soma?

It is the glaucous sheen of the stems that gives this plant to the moon.

The Ally

Between body builders, dieters, asthmatics, stuffed-uppers, truck drivers, and ravers, Americans consume three billion doses of ma huang or ephedrine-based products annually. The DEA and the FDA have pushed restrictive laws, and the health establishment a great deal of newspaper publicity over the dangers of the drug. Some two score deaths are noted, and that ephedrine is an "amphetamine-like stimulant."

History

Ephedra is widely cited as having a five thousand year history in China. The source of this claim is evidently Shên-Nung, who states that *Ephedra* will cure colds, headache, and fever, will produce perspiration, stop coughing, cure chills, and reduce hard swelling. While the dating of Shên-Nung to five thousand years is legendary, prehistoric use of *Ephedra* is well-proven archaeologically, as we shall see, and the Chinese claim might well be true. Ma huang was introduced to Western medicine in the 1920s by Ku Kuei Chen, a pharmacologist at Peking Union Medical College, who had recently completed his doctorate at the University of Wisconsin. Ephedrine quickly replaced epinephrine (adrenaline) as the drug of choice for asthma.

Ephedra may be our most ancient continuously used plant ally. Pollen of *Ephedra altissima,* along with the pollen of five other herbs, has been identified in a 60,000 year old Neanderthal burial site in Iraq, named Shanidar IV. As the other plants identified (species of *Achillea, Muscari, Centaurea, Senecio,* and *Althea*) all have medicinal properties, the finding is highly suggestive that the Neanderthals were plant people. This point is contested, though not vigorously, by Ian Tattersall (1999) who states that the pollen could have been brought into the burial by burrowing rodents, or blown in by the wind. Tattersall points out that grave goods are conspicuously absent in most Neanderthal burials and cites this fact as indicating that the Neanderthals possessed neither symbolic thought nor language, (his conclusion is based on a great deal more evidence than just the burials). But it seems likely that at least one old Neanderthal had accumulated a great deal of herbolgy and was buried with the plants he used to keep himself alive.

Ephedra next emerges in the archaeological record in Chinese Turkestan, west of Dunhuang and the Jade Gate, in the Tarim Basin. Remarkably well preserved mummies have been uncovered at Cherchen, Loulan, and Ürümchi. The mummies date variously to between three and four thousand years old, the oldest dated to 2000 BCE (Barber 1999). The mummies are Caucasoid—tall, large nosed, round eyed, and blond. Elizabeth Barber, an expert on ancient textiles, is able to identify the people as Indo-Europeans by examining the techniques used in their weavings, which are spectacularly and colorfully preserved. In particular, some of the plaids closely resemble those found in Hallstatt graves in Austria (ca. 1200 to 400 BCE), a culture linguistically related both to the Tocharians and to the ancient Celts.

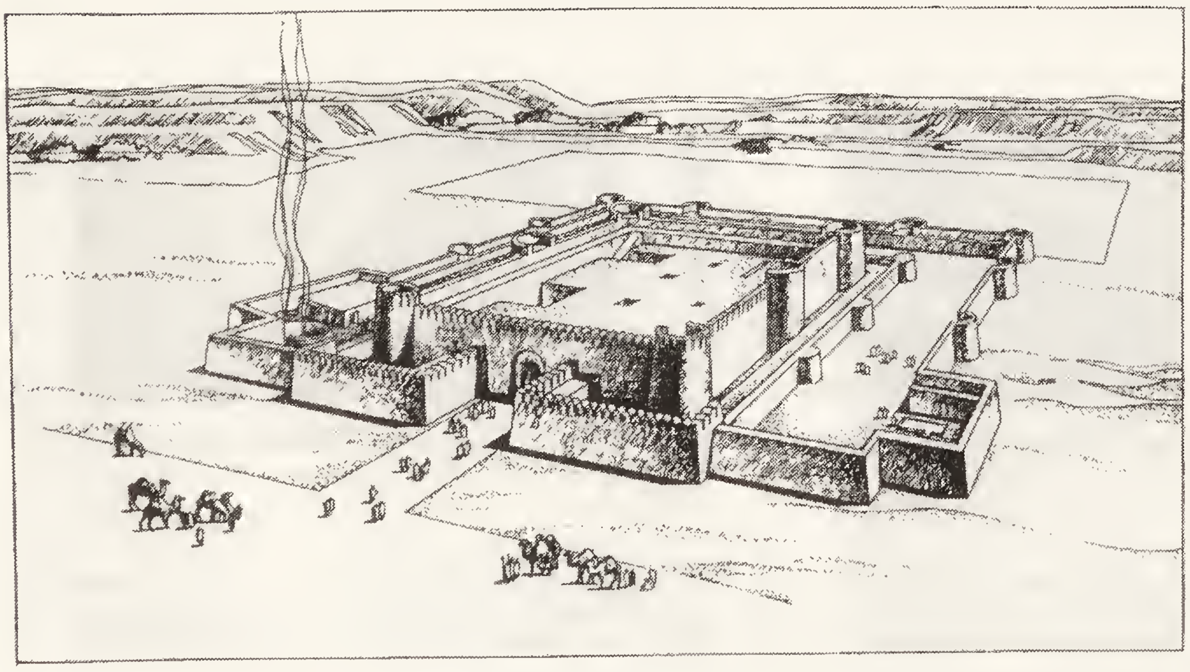
Tocharian is the easternmost branch of the Indo-European language family and is attested in the Tarim Basin by many surviving documents from the third to the ninth century CE, as well as by place names and important loan words in Chinese. Still, the linguistic identity of the mummies cannot be positively known. Barber believes that the Tocharians were the second wave of Indo-European speakers to arrive in the Tarim Basin, arriving at Hami around 1200 BCE, and that the first wave, which arrived around 2000 BCE, spoke some form of Indo-Iranian. For our purposes, what is most remarkable is that the mummies were buried with bundles of *Ephedra* wrapped into their garments. The occurrence of *Ephedra* in the Ürümchi burials suggests that some early Proto-Indo-Iranian people considered *Ephedra* to be a life-bestowing plant.

The Ally

Another cup of hōm,
and dive back into pedestrian ephemerality.

History

Two features dominate a relief map of inner Asia: the massive Himalayan mountain range which resulted from the collision of the Indian subcontinent with the main Asian plate, and a huge elliptical sink called the Takla Makan desert, bounded on the south by the Kunlun range and on the north by the Tien Shan. Clearly, the Takla Makan is the back door to China. The Silk Road. Besides the two caravan paths connecting Kashgar and Loulan around the north and south borders of the Takla Makan, there was a third route, the "north road," that led through the valleys and foothills north of the Tien Shan. Turfan and Ürümchi are both on this route. The northern route would be the preferred route for slow-moving, migratory people with herds of animals. Following the route west, it passes through Tashkent and Samarkand, then on into Bactria and Margiana in Central Asia near the Oxus River and south of the Aral Sea. We can call this route the Ephedra Trail.



KHANATE

Around the end of the third millennium BCE, Bronze Age settlements began appearing around riverine oases of the Murghab Delta

(Margiana) in southern Turkmenistan. By 1900 BCE these settlements had spread to the Oxus Plain (Bactria) in northern Afghanistan. The settlements were based on irrigation and of small size; they were khanates rather than cities, and were spaced at intervals of several kilometers from each other. At some of these settlements there were large, walled, fortified enclosures—some have called them "temples"—ranging from fifty to more than a hundred meters on a side. These enclosures contain other rooms and enclosures, some of which appear to have been used for preparing ritual beverages, and others that housed fire altars. The beverage preparation rooms, washed white with gypsum, contain platforms along the walls with sunk-in vessels and ceramic strainers. The vessels contain residues of *Ephedra,* along with, in some, traces of *Cannabis* and *Papaver.* Viktor Sarianidi, who led the principal excavations of these sites during the Soviet period, has named it the Bactria-Margiana Archaeological Complex, or BMAC. The presence of both a fire altar and a ritual beverage is of course highly suggestive of the soma ceremony of the *Rg Veda* and the haoma ceremony of the *Avesta.* While not everyone concurs with this interpretation of the BMAC (David Flattery, in a personal communication, doubts the connection), there is a great deal of convincing evidence, material, linguistic, and circumstantial, that the BMAC is the earliest evidence of soma drinking. The corollary is that *Ephedra* is the sacred and much fabled *soma/haoma* of the Indo-Iranians and Vedic Indians. The picture, admittedly, is not completely tidy, but neither are the alternatives.

VESSELS SIMILAR TO THIS INNER MONGOLIAN EXAMPLE, C. 2000–1500 BCE—CALLED BY THE CHINESE "LI" STYLE—WERE DESIGNED TO BE PLACED DIRECTLY ON THE FIRE. SUCH VESSELS SPREAD FROM WEST ASIA THROUGHOUT EAST ASIA DURING THE NEOLITHIC PERIOD; THE FLAMELIKE FORMS SEEN HERE REFLECT WEST ASIAN MOTIFS.

There is a lot of evidence to support the *Ephedra* proposal for soma. For one, in some places, *Ephedra gerardiana* is actually identified with the Sanskrit word *soma.* Contemporary soma rituals in southern India use a plant of the milkweed family, *Sarcostemma,* as a substitute for the original soma. *Sarcostemma* closely resembles *Ephedra* morphologically. *Ephedra* grows where the Indo-Europeans lived. *Ephedra* is still used ritually by Zoroastrians in Iran and India. *Ephedra* stalks are greenish-yellow, the *hari* color so frequently attested in the *Rg Veda.* The branching of *Ephedra* fits with soma's description as "thousand boughed" (RV.9.5.10), "much-branched" (AV.10.3-4). The stalks are straight and arrow-like (RV.10.89.5). Wasson's "leafless" arguments all fit *Ephedra.* The tall species of *Ephedra* are pine-scented ("pleasing") and have red berries eaten by birds, again correlating with passages in the sacred texts (AV.10.4, Av.10.11).

More than one hundred plants have been proposed as soma. Most of these proposals lack significant evidence. At this point, besides *Ephedra,* the major contenders are *Peganum harmala* (Flattery & Schwartz, 1989) and *Amanita muscaria*

(Wasson, 1968). These authors, between them, provide adequate arguments against a score of third-rung candidates.

Wasson's proposal that the original soma was *Amanita muscaria* has been critiqued by Flattery, and, more particularly, by Schwartz, in terms of Wasson's etymological arguments. But a few points seem not to have been mentioned, so I'll do a quick review. First off, *Amanita muscaria* is only known to be used by shamanic people, which the Vedic Aryans were not. Wasson himself stated that a crucial argument in his case was that the alkaloids in *Amanita muscaria* are excreted unmetabolized in the urine, and mistakenly states that no other plant has this property (Wasson 1968, ch. 7). Wasson's error here is two-fold. First, there is no conclusive evidence that Vedic priests, past or present, drank urine. Second, ephedrine is excreted unmetabolized in urine just as is muscimol and a number of other alkaloids, including psilocin. Most Vedic scholars, including Wendy Doniger, consider that the verse in question:

> *the swollen men piss down the fluid set in motion*
> *—Rg Veda 9.74.4*

refers to the Maruts, in this case, rain-giving clouds.

Wasson's arguments are brilliant and cogent, but many of them, such as there being no mention of leaves anywhere in the *Rg Veda,* or that soma grows in the mountains, could equally well apply to *Ephedra.* As pointed out by Flattery and Schwartz (1989), many of the soma passages in the RgVeda used by Wasson actually refer to *soma pavamāna,* the liquid extract, and not to the soma plant itself. At other places the poets are describing Soma, the divinity (not that good poetic tropes shouldn't go both ways.) Wasson's insistence that the Sanskrit *hári* never refers to green is not supported by the dictionary nor by any other scholar I've consulted. Lastly, while *Ephedra* is still in use as *haoma* in Iran, and a plausible substitute for *Ephedra, Sarcostemma brevistigma,* is used for soma in south India, there are very few records of contemporary or historical use of *Amanita muscaria* by either the Indians or the Iranians. That should be conclusive.

> *Right. Except for the "mushroom effect."*

And except for disturbing passages such as "Now thou growest of milky whiteness, and now thou growest golden" (Yasna.10.12), which could certainly refer to *Amanita muscaria,* as could the Old Indic *saumya*, meaning "soft," if, as some claim, it is cognate with *soma.*

David Flattery and Martin Schwartz (1989) present persuasive arguments that the original soma is *Peganum harmala.* Flattery works with Iranian texts: the *Avesta* and related Zoroastrian documents. While building a very strong case that harmel (*Peganum harmala*) was **sauma* (his working term for the soma/haoma plant in Proto-Indo-Iranian), he also builds a strong case for *Ephedra.* Specifically, he states that contemporary and historically attested words for *Ephedra,* such as *hōm, hauma,* and *soma* indicate that **sauma* has referred to *Ephedra* since

Proto-Indo-Iranian, before the Indic and Iranian branches split. In spite of the fact that *soma* and its cognates have been terms for *Ephedra* for at least four thousand years, and that *Ephedra* is still drunk every day in Zoroastrian haoma ceremonies, Flattery believes that *Ephedra* was an ancient admixture plant, and that the principal **sauma* plant was *Peganum harmala.* His main argument against *Ephedra* is pharmacological—that the *Ephedra* in the contemporary haoma ceremony produces no intoxication, that there is no use of *Ephedra* in Iranian or Indic folk medicine, and that *Ephedra* is not generally recognized as having psychoative properties.

Such, clearly, is not the case in the United States...

The absence of *Ephedra* (*"hōm")* in Iranian folk medicine is rather interesting, but, if anything, supports the position of *Ephedra* as a most important sacred plant. Why else would such an important and medicinal psychoactive plant *not* be used secularly? *Hōm* juice does have ritual uses apart from the Haoma ceremony. According to S. Mahdihassan (1982), *hōm* juice, called the "chief of medicines," is given to new-born children as their first drink, and, even more significantly, is administered as a last drink to the dying. Mahdihassan connects *haoma* with the Elixir of Immortality. Joseph Needham gives some credence to this theory, stating that the idea of the *Elixir* may have come to China from the west (ultimately, he speculates, from Babylon and the *Epic of Gilgamesh*). Needham, however, believes that the soma elixir was a mushroom. Whether or not China received the idea of an Elixir of Immortality from the West is highly debatable, but regardless of which direction the elixir traveled, the use of *Ephedra* as a plant given to the dying is documented at both ends of the "Ephedra Trail."

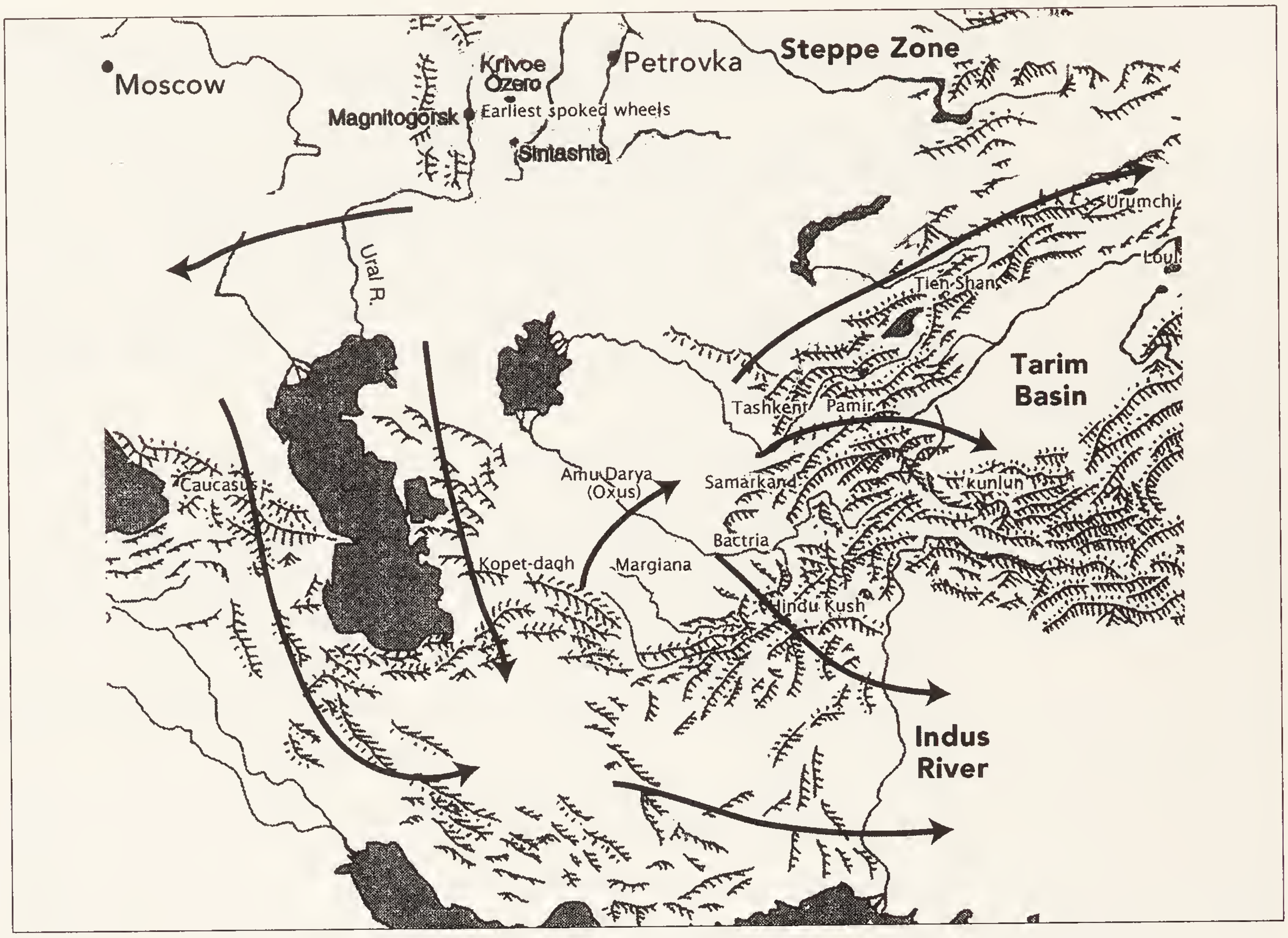
Inflame me like a fire kindled by friction; make us see far;
make us richer, better. For when I am intoxicated with you, Soma,
I think myself rich. Draw near and make us thrive.

—Rg Veda 8:48.6, tr. Wendy Doniger

My main argument for *Ephedra* being the ancient soma is mythopoetic, and is the same argument that Flattery uses against it: pharmacology. If there is one salient point that has emerged from our tour of the *excitantia,* it is that each of these plant allies has generated songs of praise from poets, and that each of them has had, in their history, religious use.

Clarifying Soma, when you are sated with waters
your juice runs through the sieve made of wool.
Polished by the poets, Soma who brings ecstasy,
be sweet for Indra to drink.

—Rg Veda 9:74


Moscow
Krivoe Ozero
Petrovka
Steppe Zone
Magnitogorsk
Earliest spoked wheels
Sintashta
Urumchi
Loul
Ural R.
Tien Shan
Tarim Basin
Tashkent
Pamir
Caucasus
Amu Darya (Oxus)
Samarkand
kunlun
Bactria
Kopet-dagh
Margiana
Hindu Kush
Indus River

CENTRAL ASIAN EPHEDRA PATHWAY

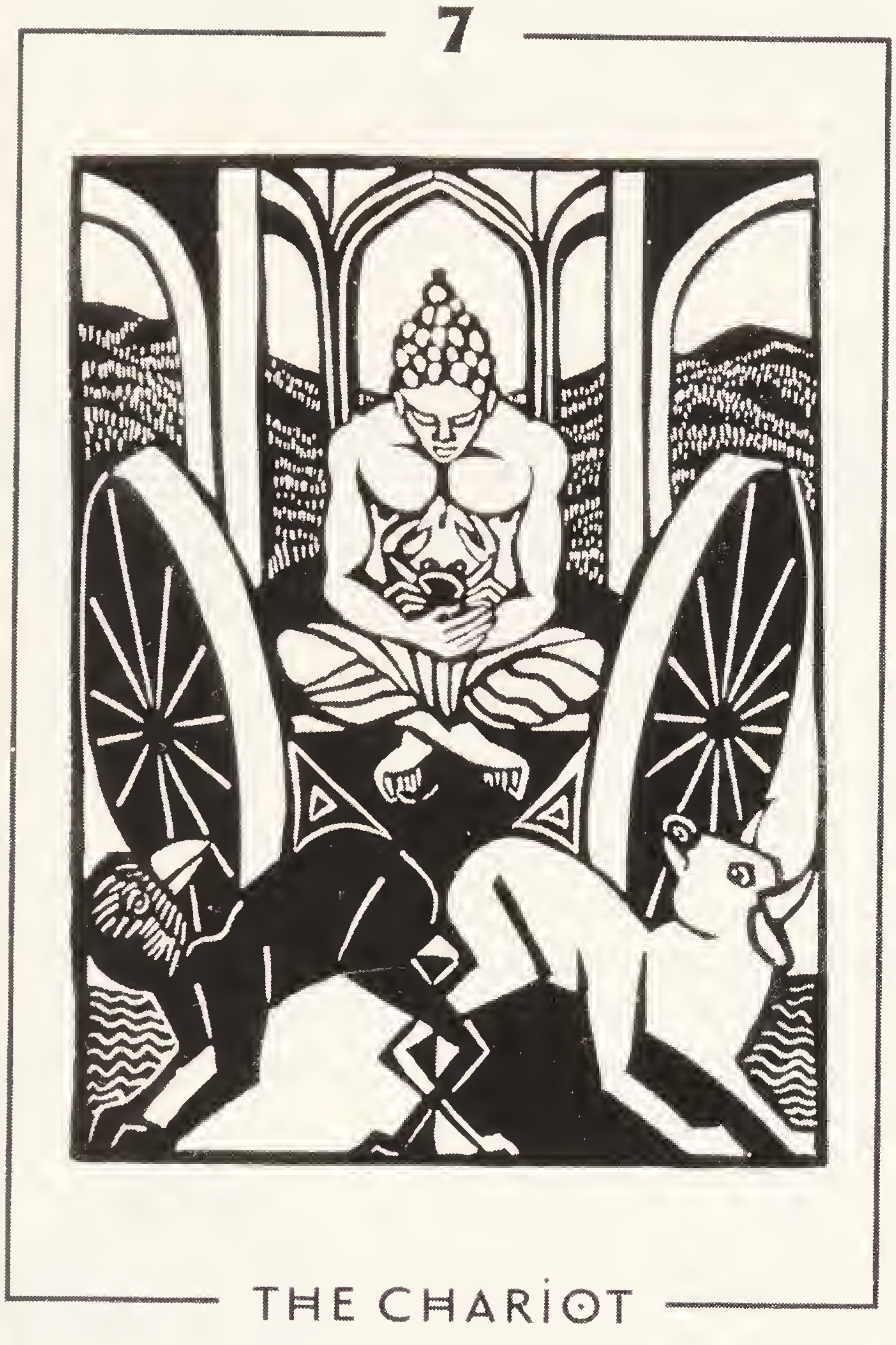
The tone of the Vedic songs brings to mind the Nahuatl songs of the Aztecs, which, interestingly, as is examined in the notes to the chocolate chapter, Gordon Wasson could not believe to be inspired by a "mere" stimulant. The case of chocolate is particularly relevant here, but coffee, tea, mate, the black drink, and kola, have all had their mystical and ceremonial traditions. Coca was deified by the Incas. By contrast, we are an excited culture and our stimulating plants are wholly secularized. We are steeped in stimulation and take it for granted.

We have also forgotten the sacred and visionary properties of tobacco.

I have no doubt that given the proper setting and expectation, a strong tea of ma huang would be impressive and salutory—enough to elicit words of praise—especially if one were told that it was a new phenethylamine designed to promote strength, clarity, euphoria, and fellowship, as is promised by many verses in the *Rg Veda*.

I ask of thee, O golden one,
intoxication, power, victory, health,
healing, success, increase, strength
of the whole body.

—*Hōm Yašt (Yasna IX:17), tr. Martin Schwartz*



A global plant mythos begins to emerge: *inebriantia* in the Mediterranean, associated with Dionysus (and, later, Christ); *euphorica* in Old Europe, associated with the goddess; *phantastica* in the New World, associated with shamanism; and *excitantia* in Central Asia, associated with cosmic dualism, Judgment, and, later, yoga. Why should it surprise us that the people who invented the spoked wheel and the chariot would find their god in a stimulant?

Try picturing them
as a motorcycle gang—
we'll call them the "Trinity M. C."—
kind of like "The Wild Bunch"
high on the religion
of speed.

The verses in Book IX of the *Rg Veda* that describe soma as a stimulant far outnumber those that *might* refer to it as a hallucinogen, and the same is true of the *Avesta.* Haoma and soma bring strength, mental clarity, success in battle, and success in business. It is good for the body and can ward off death. Also, clearly, it is available in quantity—cartloads and bundles (for example, *Yasna* 10.17)—which would be unlikely for *Amanita muscaria.*

Flattery presents three Pahlavi texts that speak of a drink that causes sleep and visionary dreams. Flattery connects these texts to haoma. But in two of them what is drunk is a mixture of haoma and *mang,* which Flattery glosses as "strong, psychoactive drug." In the third text the potion is "liquid omniscient wisdom," not clearly just haoma alone. It is quite plausible that the sleep and dream-inducing effects were not from the haoma, but from an admixture plant.

I believe that Flattery is correct that the ancient Magi used *Peganum harmala* (it is still used as incense, both sacrally and secularly), but, while the case is certainly not closed, it seems much more likely that harmel was the admixture to haoma, not the **sauma* plant itself. A mixture of *Peganum harmala,* a potent monoamine oxidase inhibitor, with *Ephedra* would produce a very powerful (and perhaps risky) combination, certainly enough to test the purity and fitness of the priests (if that was the purpose of the ceremony), as would even more certainly, henbane (*Hyoscyamus niger*).

I give you, O righteous, truth-furthering Haoma,
this body which appears to me well-grown,
to rapid Haoma, for intoxication, for well-being, for beatitude.
May you give me, O righteous, death-destroying Haoma,
the best existence of the righteous, light, all bliss.

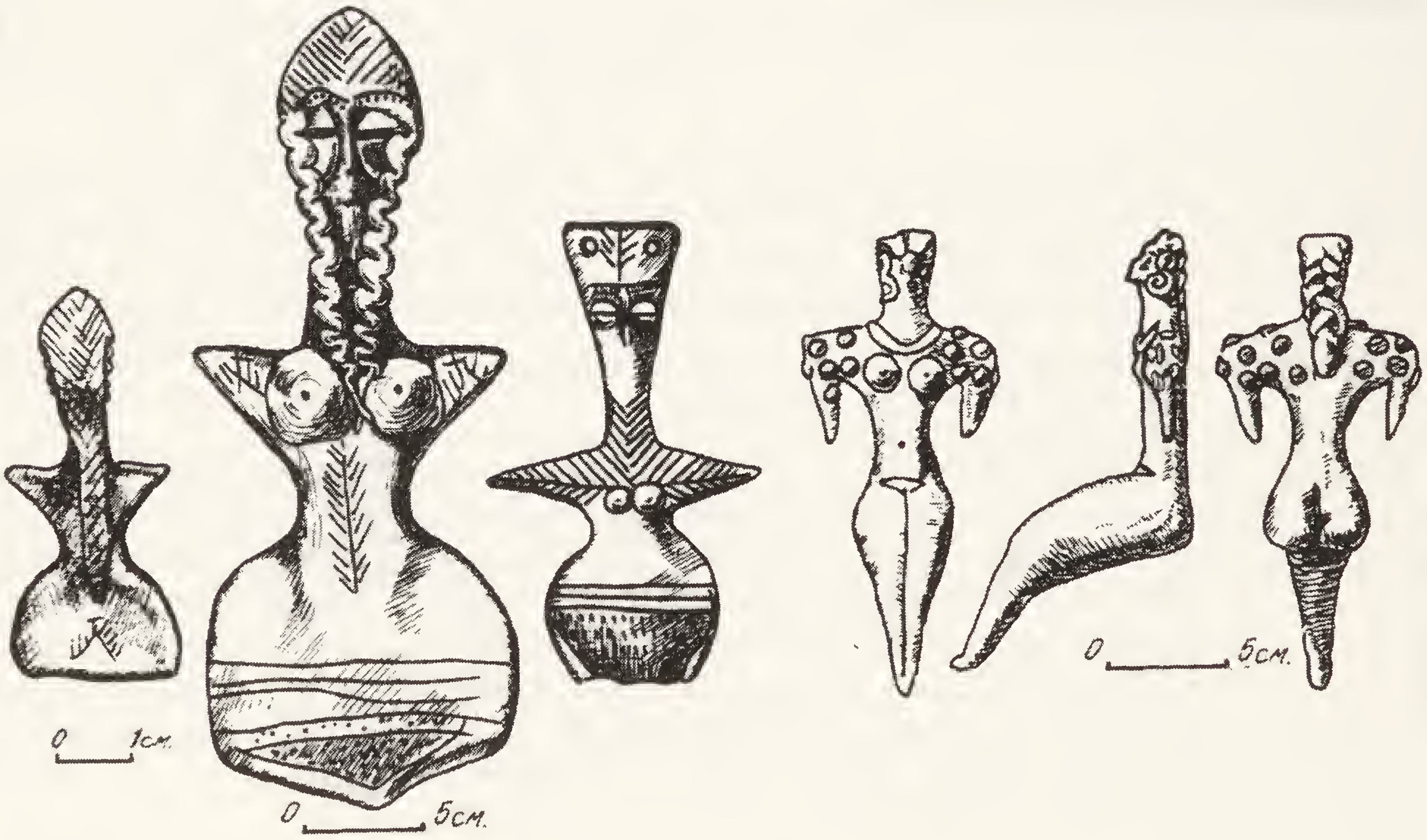
—Hōm Yašt (Yasna XI:10), tr. Judith Josephson

I think we have all been fooled, as was Wasson, by thinking that soma, a sacred plant given great reverence, must therefore be a hallucinogen. It is because we are so surrounded by soma that none of us ("us" being those convinced that soma is a psychotropic plant) were ready to consider that soma might be a "mere" stimulant.

The Image

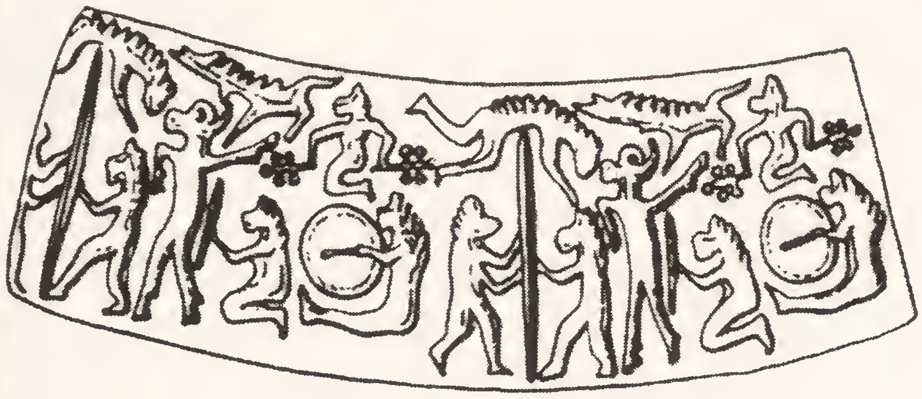
The powers of Light and Darkness are fighting it out in the Spirit World. The battle could go either way, the contestants are evenly matched. We can help from our side of the Veil, even if only a little.

How better to combat the powers of darkness than to keep vigil, to stay awake the whole night, to keep a light burning, to chant songs and hymns of encouragement until the triumphant sun reappears with the dawn. And then to enjoy that special giddiness of having been up all night, of drinking yet more soma to extend the wakefulness into the day. That, indeed, is joy.



SOUTHERN TURKMENIA, TERRACOTTA FIGURINES

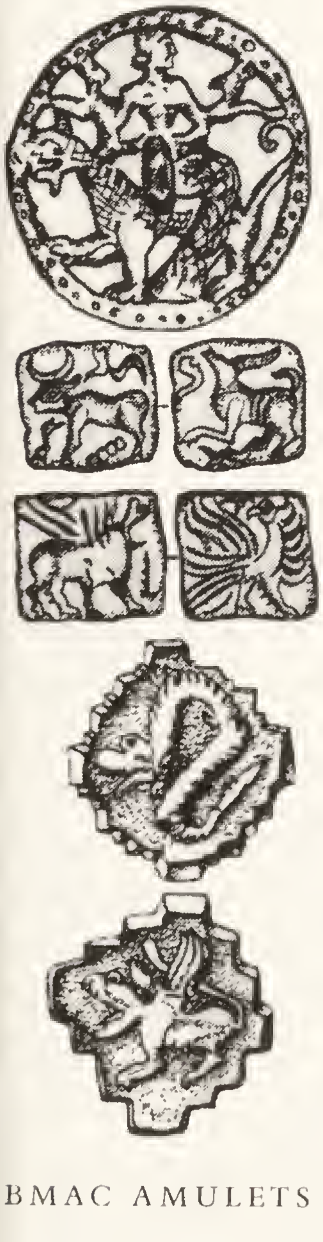
History The early material culture (2200 to 1900 BCE, or thereabouts) of the Bactria-Margiana Archaeological Complex included many female figurines and even a bull's head that could have been at home in Mycenae. Stylistically, the artifacts are closelly linked with the Kopet Dagh foothill culture of southern Turkmenistan. The Kopet Dagh mountains form the north border of the western Iranian Plateau and run northwest to the Caspian Sea. It seems likely that the original inhabitants of the BMAC came from Neolithic settlements along the northeastern foothills of the Kopet Dagh. These towns practiced irrigation, but were in crisis because of overpopulation, a general warming and drying period that spread over all of Central and South Asia, or both. It is thought that groups of these people ventured out across the Kara Kum, the "Black Sand Desert," to the Murgab River and the Amu-darya (the Oxus).



MARGIAN CYLINDER-SEAL REPRESENTING A SHAMANIC RITUAL

Shortly after 2000 BCE the Margiana oasis settlements began developing their own distinctive cultural styles, particularly in ritual objects. Notably, the violin-shaped terracotta goddess figurines completely disappear. Females begin appearing in more narrative scenes, in relation to men and animals (often fabulous), rather than alone. Winged animals appear. While the Oxus settlements surely had contact with the Harappan culture to the southwest and to the Andronovo culture to the north, these changes appear to be peaceful, local developments. Although not everyone agrees, most archaeologists believe that the culture that emerged, the "Bactria Margiana Archaeological Complex," or BMAC, spoke Indo-Iranian or Indo-Aryan. The BMAC spread east across Central Asia to Bactria, southeast into the Indus Valley, southwest into Iran and perhaps beyond.

Interpretation of the BMAC sites presents a trenchant example of the difficulties involved in correlating archaeological and linguistic evidence. First, it is not possible to deduce language from material culture alone. Second, the material culture is almost always mixed—that is, containing elements and motifs associated with sites from a number of disparate geographical areas. Third, simple equations of culture with ethnicity, and the concomitant theories of invasions or migrations are rarely supported by physical anthropology. This last problem is particularly relevant to Indo-European studies, where nineteenth-century ideas of massive population movements, usually violent, are still adhered to by some archaeologists, usually on ideological grounds. Central Asian studies highlight all of these issues.



BMAC AMULETS

It seems clear now that material culture can, and usually does, spread by reasons of its own dynamics without large-scale migration of peoples, and the same can be true of languages. Further, it seems clear that peaceful, or relatively peaceful, assimilation is the general rule and violence the exception. Cultures are rarely insular. Long distance trading in the Bronze Age was already extensive, and we have no reason to think it is only in historical times that there have been curious and adventurous people who traveled to, and perhaps settled in, distant lands.

> *Thee I invoke for courage and for victory*
> *for my body and for strength that*
> *brings salvation to many.*
>
> —*Yasna 9.27*

Further research, both archaeological and philological, could significantly change the prevailing opinions on the origins and identity of soma and haoma. With that in mind, as a caveat and emergency disclaimer, we can, mixing the general ideas of Erdosy, Hiebert, Parpola, and Sarianidi, with some imagination, concoct a possible story.

Sometime, probably in the early Fourth Millennium, people living in Central Asia, south of the Urals, learned to tame horses. A pastoral people, horses would have allowed them to keep much larger cattle herds and to have vastly increased mobility. They shared stories of a Drink of Immortality, *amrita*. The people who became the Greeks either carried the word ambrosia with them, or picked it up along the way, probably sometime in the third millennium BCE (Cavalli-Sforza, using genetic algorithms, places the Proto-Iranian/Proto-Indic split much earlier—5,000 BCE—and the split-off of Proto-Greek even earlier. Cavalli-Sforza claims that his chronology supports the Renfrew-Gimbutas scenario of Indo-European dispersion, but his dates are radically out of agreement with Neolithic archaeology.)

Not all of these people knew about *Ephedra*—only the ones who lived near where it grew, perhaps near the Ural Mountains. In the early times, the use of *Ephedra* was not ceremonial. Some of the people started heading east, along the Ephedra Trail, and they took their bundles with them.

As the use of *Ephedra* became more and more ritualized, professional priests took over production of the beverage, in particular the pressing, and the verb birthed the noun: *sauma*. (Other instances of this process, free access → restricted priestly access → symbolic access, which may be part of the general centralization of political power in the Neolithic, are the attempted restriction of coca use by the Incan nobility, the restricted access to manna by the Hebrew priests, the traces of psychotropic plants found Tantric rituals, and, in another context, German laws restricting the use of coffee to the nobility.) The *Ephedra* people most probably spoke Proto-Indo-Iranian, and *sauma* became linked to the Drink of Immortality, amrita. Parpola (1997) believes that as the Indic speakers moved south through Bactria, they had an altercation with *Dāsas*, (Iranian: *Dahas)*. The Indic tribe came out the better—and they made much of the story in the *Rg Veda*. After their violent conversion, which was probably much exaggerated, the *Dāsas* drank *Ephedra/soma.* Some of the people kept moving, south to Baluchistan and the Indus Valley, intermarrying as they went. Their culture spread faster than their genes.

In Iran the case is just as complicated, or more so. Ideas, design motifs, technology, and stories moved in many directions, both east-west and west-east. The details are not all clear, but by the time of Zarathustra, people in Iran were drinking haoma and worshipping light.

A fire still burns at Baku.

Matters of State and Liberty

Ephedrine is the active ingredient of the "look-alike" speed pills advertised in many magazines—the various pills packaged to look exactly like the amphetamine pills of yesteryear. The DEA have ephedrine on their hit list, and are trying to restrict ephedrine and pseudoephedrine in every way they can. Unfortunately, ephedrine and pseudoephedrine are almost the only two over-the-counter medications that really work. A spate of articles in journals and newspapers report occasional deaths from overdoses of ephedrine, or where ephedrine may have been a contributing factor. Herbal products, such as ma huang and various enriched mixtures of ma huang, ephedrine, and caffeine are also singled out, usually with the byline that just because a product is "natural" it is not necessarily "safe," and that these products should therefore be regulated. That natural products are not necessarily safe is of course quite true, but "safe" is a relative term. While there are a few reported poisonings from herbal products containing adulterants, by any reckoning the health risks from ma huang are minimal.

> *Besides, isn't there something wrong with the whole picture? If we banned every drug on which one could overdose, what would it leave? (Actually, it would leave LSD and marijuana—far safer that way than caffeine, nicotine, aspirin, alcohol, and 99% of the Physician's Desk Reference).*

The real reason the DEA would like to ban ephedrine is that the molecule is an ideal precursor for other (and, *at the proper dosage,* pharmacologically safe) stimulants such as methamphetamine and methcathinone. Where will this end? When will we begin the challenging but promising program of empowering our citizenry with responsibility? Cultures have to *learn* how to use the *pharmakons.* Treating free citizens like children not only impedes this process, it diminishes the very fabric of maturity and lawfulness we should be protecting.

The Ally

And yet the past comes round again
And new doth old fulfil;
In sensual transports wild as vain
We brew in many a Christian fane
The heathen Soma still!

—*John Greenleaf Whittier, "The Brewing of Soma"*

CATHA EDULIS

Common Names Khat, chat, qat. The Flower of Paradise.

Related Plants and Substances *Ephedra spp.*, amphetamine.

How Taken The fresh leaves and twigs are chewed. In Yemen, and Somalia, up to a pound of the fresh leaves and twigs is wrapped in banana leaves into a bundle called a *marduuf,* which keeps them fresh. The *marduuf* itself may be composed of a number of smaller bundles, each weighing about 50 grams. As the leaves and twigs are chewed, the residue is collected in the cheek where it is kept for ten or twenty minutes, until the juices are fully extracted. If the leaves were of the choicest and most tender variety, the bolus may be swallowed. Otherwise it is ejected.

Experienced chewers drink a lot of water along with the leaves.

The Ally

O, thou blessed that contains no demon, but a fairy!
When I follow thee thou takest me into regions overlooking Paradise.
My sorrows are as nothing. My rags are become as robes of silk.
My feet are shod, not worn and bleeding.
I lift up my head—O Flower of Paradise!

—Arab song, quoted in Dreiser.

The Plant Drying the leaves changes their chemistry, so in Africa the use of khat is dependent on proximity to the plants or to a fast distribution network. Formerly, the leaves were drunk in an infusion. When European traders arrived in the Yemeni port of Mocha in the fifteenth century, khat tea was as popular as coffee. But while coffee beans make good cargo, khat leaves do not, and the rest, as they say, is history.

Two main varieties of khat are recognized, red khat and white khat, each sold in the markets under several named grades. Red khat is most preferred, and can be recognized by the red (rather than white) color of the central leaf vein.

In many parts of Somalia, khat is chewed by a majority of the population. Successful businessmen may have a special room in their houses for khat chewing. Friends gather in the afternoon, chew khat, and discuss the issues of the day for several hours. Or perhaps Koranic exegesis. In rural areas, farmers chew the leaves before performing the bulk of the day's work.

In Yemen forty percent of the arable land is devoted to *Catha edulis.* Chewing khat cuts across all social lines, chewed by rich and poor alike, by businessmen, merchants, farmers, and, more recently, students.

Effects

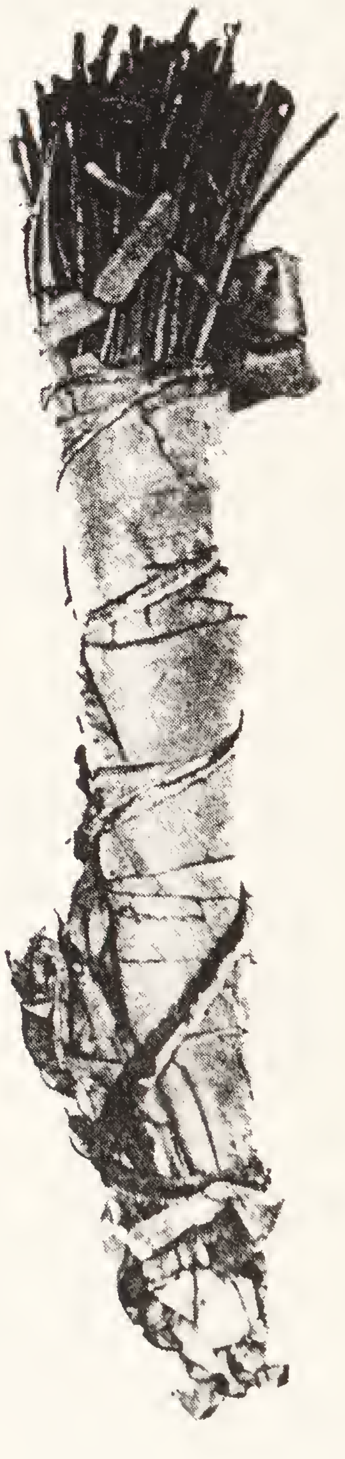
“About like five milligrams of methamphetamine.” But more euphoric and much shorter acting.

The Plant

The origins of khat are known only from legend. Some of the same stories telling of the origins of coffee are told about khat: that it was a gift given to two saints by an angel so that they could spend the night in prayer without dropping off to sleep.

In another story, again echoing stories associated with the coffee bean, a herder named Awzulkernayien noticed the effects that the leaves were having on his goats, who were chewing them. Awzulkernayien proceeded to try the leaves himself, and was impressed at how he was able to stay up into the late hours meditating. Awzulkernayien’s name is still mentioned in the ritual prayers recited before chewing the leaves in the eastern horn of Africa.

Like all psychoactive plants, khat is considered to be holy, to be a sacred gift, among those closest to it.



A MARDUUF

One legend is that khat was the energetic medicine that Alexander the Great used to keep his armies healthy and moving. An interesting story, in view of the widespread use of methamphetamine during World War II by the German *Wehrmacht* and other armies.

The first written mention of khat is in the 14th century, when Sultan Sabar Ad-Din stated his intention of planting khat in the Christian city of Marad after its conquest.

Taxonomy

Catha edulis is in the Celastraceae. Wild trees may reach eighty feet in height. Morphological variability within the species is high. In some varieties the leaves are opposite, in others alternate. Mature leaves have a glossy surface and are faintly aromatic. The flowers are small, white, five petaled, and grow in attractive axillary cymes.

One particularly potent variety of khat comes from Kenya, where the young stems sprout directly from the major branches, and contains high concentrations of alkaloids in the bark as well as in the leaves.

Effects

Increased concentration, loquacity, improvement of thought, general well-being. Alertness. Relief from fatigue and drowsiness. Enhancement of imagination. Increase in self-confidence. Improved ability to associate ideas.

These are the same beneficial effects ascribed to low doses of amphetamine. But how many amphetamine users limit their intake to five milligrams? A distinct advantage of khat over amphetamine for many situations is that it is short-acting.

Habitual khat chewing may lead to constipation, anorexia, and insomnia. Deprivation symptoms include malaise and sometimes headaches, not unlike caffeine.

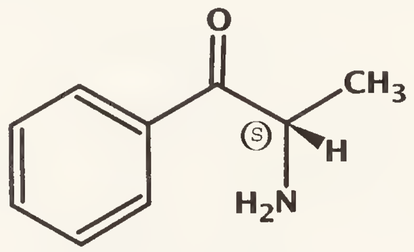
The Plant

In its natural state, khat grows in the mountains of tropical eastern Africa from 5,000 to 8,000 feet. Tiny white flowers appear in early summer, followed by seed capsules. Khat is rarely grown from seed, however, but is propagated vegetatively, from the lower branches, especially the root suckers. Break off the suckers with a nice piece of the root attached. It can be potted or planted directly in the ground. Khat likes good drainage, full or partial sun, and is tolerant of aridity, poor soil, light frosts, and coastal winds. The plant will respond appreciatively to a little feeding, especially nitrogen.

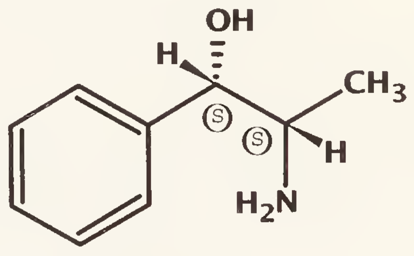
Because of its tall habit, a row of khat plants would make an excellent fence-like hedge for suburban lots. The Sunset *Western Garden Book* correctly places the plant in good standing as an ornamental shrub for zones 12, 13, and 16-24, which covers most of the west coast of the United States and some parts of the Colorado desert. Old plants in parks grow to more than twenty feet. Commercial khat is kept pruned to make it bushier and easier to harvest.

Chemistry

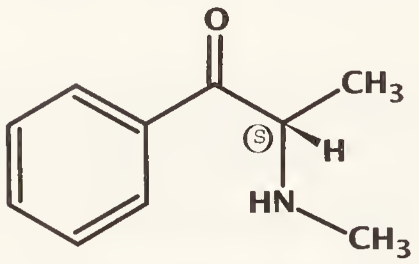
In addition to protein, calcium, iron, β-carotene, B vitamins, vitamin C, tannins and a volatile oil, one hundred grams of fresh khat leaves contain 36 mg cathinone, 120 mg cathine, 8 mg norephedrine, and small quantities of related alkaloids. Cathinone is now widely accepted to be the most active alkaloid, responsible for the greater part of the effects.



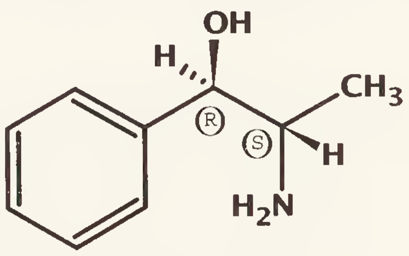
(S)-(-)-cathinone



cathine
(= (+)-norpseudoephedrine)



(S)-(-)-methcathinone



(-)-norephedrine
(= (-)-phenylpropanolamine)

In addition to the phenylpropylamine alkaloids, khat contains a group of phenylpentenylamines, with an extra carbon atom double-bonded in the side chain. Their concentration is low and their effects have not been much studied, except that they are known to be only weak dopamine releasers. Khat also contains another group of alkaloids called cathedulins. Little is known of their pharmacology, but they are not thought to contribute significantly to the main effects of the plant. Khat also contains triterpenes.

For some reason, the actual fresh weight of the leaves chewed by khat users seems to be curiously difficult for scientific researchers to measure. Reported weights vary between 50 grams and 500 grams. Peter Kalix and Olav Braenden report 100 to 200 grams, which seems reasonable. As 100 grams of fresh leaves may average more than 150 milligrams of khatamines, significant quantities of alkaloid are involved.

Cathinone is found mainly in the young leaves. The cathinone content of the leaves can be quite variable between different strains, and between different pickings. Studies have shown that the price of the leaves is highly correlated to their cathinone content, reaffirming once again the value of bioassay.

Kalix and Braemden (1985) report studies by the United Nations Narcotics Laboratory that cathinone is a phytosynthetic precursor of cathine ((+)norpseudoehedrine), "presumably" by an enzymatic process not fully developed in adult leaves, thus explaining the high content of cathinone in young leaves but not in old or withered leaves. If true, this suggests the possibility of using steaming as a means of arresting the enzymatic degradation, such as the Chinese do with tea, or the Aborigines with *pituri*. (But see notes).

Effects As with most substances related to amphetamines, reports of khat's effects on sex are mixed. Yemenis generally credit khat with increasing sexual potency. One study (Elmi), however, found that while both sexes reported an increase in libido, only the women reported a corresponding increase in performance ability.

> *I made a short, informal study on the semantics of this point. Women said that "increased sexual performance" means they would have more orgasms. Men, actually, said much the same thing—that is, that "increased sexual performance" means they would be able to bring a woman to more orgasms. I'm just reporting this. Still, it does kind of make you think . . .*

To continue: in men, Elmi's study blamed khat for both premature ejaculation and erectile dysfunction, and thus as a factor in the failure of marriages in Somalia. An American-educated economist in Yemen, Mohammed Al-Saidi, blames khat, rather than global market economics, for his country's poverty, because 80 percent of the population spend four hours every day chewing khat and socializing when they could be working. All agree that there is no crime associated with khat-chewing, and that khat's prevalence may be a reason that Yemen has virtually no reported cocaine or heroin abuse.

Pharmacology While both cathinone and cathine are stimulants, cathinone is far more potent, and acts more on the central nervous system, while cathine has more peripheral action. Various animal studies have shown that cathinone acts like amphetamine at dopaminergic synapses, eliciting release of the neurotransmitter. Drugs that block the releasing effect of amphetamine also block the same action of cathinone. Rats trained to choose cathinone over saline will choose cathine, when it is substituted for cathinone, but cathine (in that test) is eight times less potent.

Cathinone is more lipophilic than cathine, so it penetrates more easily into the sites of CNS action.

Cathinone and cathine are equally strong in producing sympathomimetic effects, such as norepinephrine release. But since more cathine is required for the CNS effects than of cathinone, users prefer high-cathinone strains which would minimize the peripheral effects (sympathomimetic effects such as increased blood pressure, sweating—the "fight or flight" syndrome.)

Cathinone is metabolized quickly, congruent with the short-acting effects of chewing khat. In fact, the rate of metabolism of cathinone is about the same as the rate of its absorption while the leaves are chewed, so the dosage is pretty much limited to the size of your mouth.

History The chewing of khat has been spreading, especially since World War II. The British tried to suppress the plant in Somalia in the early fifties, but "even shooting" failed to stop its spread (Elmi 1983). In 1957 the British replaced the prohibition with an import duty.

Effects In Djibouti, where khat is supplied to the city by airlift, it is said that the effects of the khat begin to be felt when the plane is heard overhead.

Poesis *The Qat Gimlet:*

Fill a jar with fresh khat leaves, chopped and bruised. Pour high-proof alcohol into the jar to the top, working out the air bubbles with a chopstick. Seal the jar and let macerate in darkness for several weeks. Shake occasionally.

Pour one jigger of the tincture into a glass along with one or two jiggers of Rose's lime juice. Add a little effervescent water if that's the way you like your gimlets. Add ice, and a straw. Maybe a slice of lime and a nasturtium flower if you are entertaining. Herbaceous, mildly astringent, wildly successful. The stimulating effects far surpass the weak presence of alcohol.

Methylene chloride and methanol are both better solvents for cathinone than ethyl alcohol, but then what do you do? Since cathinone may be sensitive to oxidation, it might be effective to add a little vitamin C to the chopped leaves, and to extract the alkaloid as the ascorbate.

I have heard of a quite wonderful khat wine, made with red carnation petals, of a beautiful strawberry blush color—said to be delicious and most agreeable.

> *A half-jigger of khat tincture mixed into an absinthe has also received high reviews, such as "no more than one per customer."*

The Ally A rather perfect source of natural amphetamine. The instability of cathinone and the physical process of chewing the leaves intrinsically limit the kind of abuse that is so common with speed pills or crystal. Perfectly analogous to chewing coca leaves, except that with coca the alkaloid is easily extracted. Khat is the most promising of any of the caffeine substitutes.

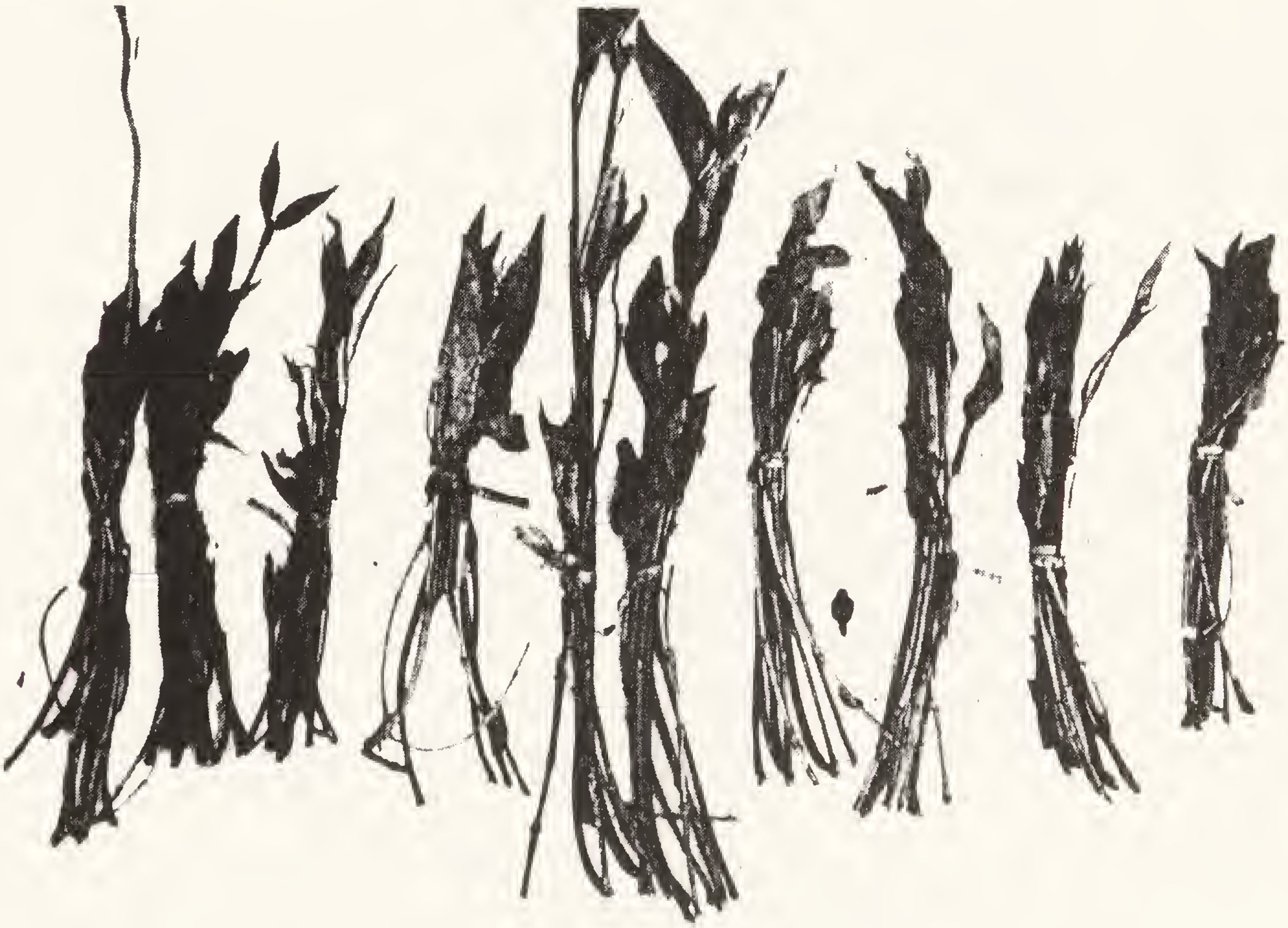
In those countries
where plants
are still free.

Matters of State and Liberty

In the United States caffeine reigns supreme. And, outside of the black market and a small number of prescriptions, unchallenged. Coffee is the biggest international commodity after oil, and evidently her corporate servants are not eager to welcome competition.

The Drug Enforcement Administration has placed cathine into Schedule IV of the Controlled Substances Act, and cathinone has now been placed on Schedule I. As if khat chewing, or any of the above mentioned chemicals were any kind of a problem in the United States. The legal status of the plant, *Catha edulis,* is unclear. The plant is not specifically mentioned, but it clearly contains a controlled substance.

Customs officials occasionally seize shipments of *Catha edulis* being imported for Somalian communities in the United States, Canada, and Great Britain. Late in 1999, police in California, acting on a tip, arrested two men who had 242 "illegal khat plants" in the backyard of their home. Canadian police in Toronto have been cracking down on khat, much to the outrage of the Somali-Canadian community.



CONTENTS OF A MARDUUF: TEN SMALLER BUNDLES

So instead of the gentle khat, we have amphetamine. Ninety percent of all illicit drug laboratories busted by the DEA and other law enforcement agencies are methamphetamine labs. That should tell us something about the demand for a good alternative to caffeine. And it should alert us to the irony of a speed culture in civil war against its own sibling. Such apparent jealousy within the family may or may not be related to the occult properties of caffeine—the two stimulants are able to co-exist in Yemen and Somalia. Still, it would be interesting to apply the techniques of psychotherapy and family counseling to this dispute within the excitantia.

The Ally

> *And by now it was that time in the afternoon when the effect of the happy possessor of khat throughout all Arabia was only too plainly to be seen. The Arab servant who in the morning had been surly and taciturn under the blazing sun was now, with a wad of the vivifying leaves in his cheek, doing his various errands and duties with a smile and a light foot . . . Everywhere the evasive, apathetic atmosphere of the morning had given way to the valor of sentient life. Chewing the life-giving weed, all were sure that they could perform prodigies of energy and strength, that life was a delicious thing, the days and years of their troubles as nothing.*
>
> *—Theodore Dreiser, "Khat"*

Matters of State and Liberty

Some chemistry students in Michigan, desiring to test out the proportional equation

amphetamine : methamphetamine :: cathinone : methcathinone

synthesized a small amount of the methyl analog. Initial reports were highly positive, but the DEA never gave it a chance. Though probably all the people in the entire United States who had tried methcathinone could have attended the same basketball game, the DEA used their emergency powers to place methcathinone on schedule I.

Subsequent reports on methcathinone from a few researchers seemingly undeterred by federal law have been more equivocal. Bingeing is said to be common, with its attendant problems of stress, inability to focus, paranoia, general chaos, and, ultimately, amphetamine psychosis. Who would want to do that if he could get good, short-acting khat, in leaf or in a hot or cold drink? The desire of the people for an alternative to caffeine is clearly evident. Let the people decide, and let the plants lead the way.

Our slogan must be repeated again:

FREE THE OUTLAWED PLANTS!

The Ally

Working in the garden, grazing a little.
Filling out income tax forms.
For hangover, for the blues, for the blahs.
For staying up late, writing.

SPEED FREAKING

Susbstance Amphetamine

Effects A tendency to monomania.

Autopilot. Or maybe a free ride, with some hint of moral condemnation there—though many of those who would condemn the idea of a "free ride" as a general moral *principle* feel quite differently about it as *principal*—say, in regard to capital gains.

But the ride is not free, and autopilot is the better metaphor. With a jet engine on your back.

Speed Kills.

The slogan of the sixties, when methamphetamine began stealing its way through the lockless psychedelic communities that were using "love" as a practical governing principle. Speed and greed, and one of them ran off with the communal bank account. "Speed kills" is a beautiful example of the effectiveness of peer pressure and, conversely, the ineffectiveness of legal proscription. For a time, speed almost disappeared in psychedelic circles. It was, shall we say, a "flash." In the spoon.

"Almost" is the key here. You have to be able to accept "almost." "Almost" is the frontier, beyond is the land of the fanatic: speed freaks and their twins, Inspector Javert and his self-righteous warriors. The prisons, the spying, the paid informants. Big Brother, gangs, and guns. The Holy War.

> *Billions of dollars are spent to keep adults from having access to methamphetamine, while Adderall (amphetamine) and Ritalin (methylphenidate) are widely prescribed for children.*

We are not saying speed isn't dangerous, but let's put it in some perspective. Used properly, amphetamines are reasonably safe and highly effective stimulants—as hundreds of millions of users could attest. A single milligram can take the edge off fatigue, while speed freaks take two hundred times that much—on a laid-back day. (I once saw a speed freak mainline a whole gram of crystal meth in one shot. Such an over-amp, tremendously ill-advised as it is, underscores the remarkable range of amphetamine's physiological tolerance.)

Ott (1993) summarizes a number of studies comparing the relative effectiveness of amphetamine over caffeine: caffeine generally has no effect on reaction time while amphetamine improves reaction time; caffeine impairs hand steadiness while amphetamine improves hand steadiness; amphetamine improves coordination performance more than does caffeine. In all areas, amphetamine at the proper dosage had fewer side effects than caffeine.

Neither caffeine nor amphetamine improved intellectual performance.

The United States Army Aeromedical Research Laboratory reported that dexedrine sustained aviator performance and alertness during a 64-hour sustained wakefulness test in a flight simulator. Three 10 mg doses of dexedrine or a placebo were given on each of the two sleep-deprived days (Caldwell et al, 2000).

Effects Elevation in mood and confidence. Heightened motor and speech facility. Suppression of alpha rhythms during extended sleep deprivation. Increased alertness. Amphetamines tend to potentiate the pain-relieving effects of morphine.

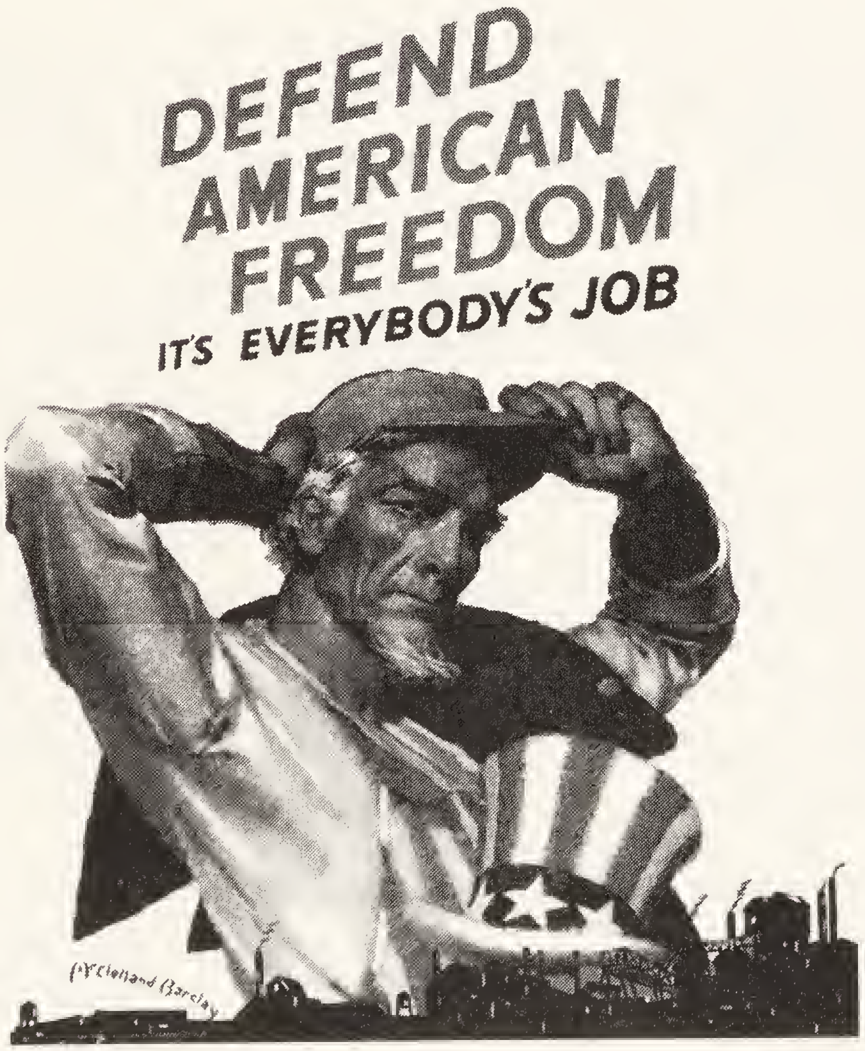
The Ally:

at some point
you may be called upon
to keep going for several days without sleep:
keep some ups around. to be
clearheaded, avoid "comedown" as much as possible,
take vitamin B along with amphetamines . . .

—Diane Di Prima, "Revolutionary Letter #5"

History Amphetamine was first synthesized in 1887 by a German chemist named Edelsno and was used to treat narcolepsy. It was included in emergency survival packets. Use of amphetamine as an alternative stimulant became more widespread through the 1930s, when it was available over-the-counter in benzedrine inhalers. During World War II, large quantities of amphetamine (hundreds of millions of doses) were issued to soldiers, sailors, and aviators on both sides of the conflict. Meth has been called the "fuel of the *Wehrmacht,*" but Japanese, American, and British forces were also regularly issued the stimulant. Adolph Hitler took daily injections of methamphetamine. (John F. Kennedy is also reported to have taken methamphetamine injections). Methamphetamine ("leetle white peells") was given to the soldiers pursuing Che Guevara in Bolivia, until they finally ran him to ground and executed him (Daughtry`1985).

When the soldiers came home from World War II, they brought the taste for amphetamine home with them, much as French soldiers, a century before, had brought the habit of absinthe drinking back from Algeria (where it was drunk to prevent ma-



BARCLAY, FOR U.S. GOVT., 1943

laria). The 1950s were the speed decade. In 1954 two percent of the adult population of the United States used amphetamine habitually, and a much larger percentage used amphetamine occasionally (Rudgley, 1999). The numbers were even higher in Japan. Speed, we might say, fueled the post-war recovery. None of this gigantic productive effort was without cost—sleep debt has its spiritual side.

so intent on getting
there
you forget what's
here

During the Vietnam War the United States Army used more amphetamine than all of the British and American forces in World War II combined. As late as 1971, stimulants, mainly amphetamines, were reported to account for twenty percent of medical prescriptions.

But Caffeine is a jealous God.

The Ally

Jack Kerouac wrote *The Subterraneans* on benzedrine in three days. He mounted a roll of shelf paper on a coathanger and fed it into his typewriter so he wouldn't have to stop typing to change sheets.

Common Names

Speed. Most properly applied to pure methamphetamine hydrochloride crystal. The term crank, which used to refer to coffee, now more often refers to impure meth-that ugly yellowish gunk. Ice is meth HCl in large crystals. The hydrochloride salt has a low enough melting point (and boiling point) to be vaporized, and smoking ice has replaced IV injection for speed freaks on the high dive. All forms of amphetamine are still available in tablet or capsule form by prescription (triplicate prescription in California, New York, and many other states), but the days of cartwheels, bombers, bennys, and dexies being easily available in safe and sane dosages are, for the present, over.

That is why there are so many meth labs. That is why there is ice. That is why there is so much overdosing.

Benzedrine properly refers to racemic amphetamine. Dexedrine is the *d*-isomer. Methamphetamine, also called Desoxyn, is amphetamine with a methyl group on the nitrogen. The *d*- form is the most active.

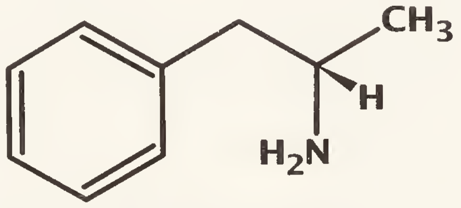
Effects

Boorish overpowering presence. Talking more than listening. Starting ten jobs and finishing none of them. A trail of chaos. Sweating. A distinctive meth "smell" or "vibe" palpably apparent to everyone else in the room.

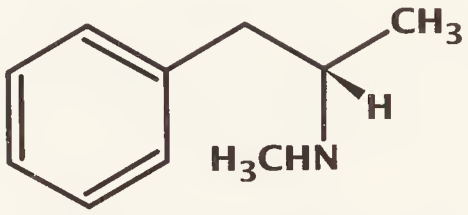
Pharmacology

Amphetamines have several modes of action. Amphetamine has some direct action on alpha-adrenergic receptors and also on 5-HT (serotonin) receptors in the central nervous system, but most of its activity is due to the indirect release of dopamine and norepinephrine from nerve terminals. The story goes like this: because of its similarity to catecholamines, amphetamine enters the nerve ending in a synapse through a reuptake channel. Once inside the nerve ending, amphetamine replaces or somehow otherwise stimulates the release of the endogenous amine stores in the synaptic vesicles, which then flood the synapse. Cocaine, by contrast, acts by blocking the reuptake channel, and should, in theory, thereby inhibit the action of amphetamine by not letting it into the nerve ending to begin with. Pre-dosing with reserpine, which releases the stores of dopamine granules in the nerve ending, nullifies the activity of amphetamine but not of cocaine. Amphetamine releases dopamine (and norepinephrine) regardless of whether or not the nerve cells are firing. This is not true of cocaine, since its action is to block the return of dopamine released into a synapse by firing.

The "alerting" effect of amphetamine is presumably due to the release of norepinephrine (NE). Higher doses release dopamine (DA) and it is thought that DA, particularly in the neostriatum, is responsible for the stereotypical behavior (repetitive motions, etc.) associated with amphetamines (Gilman 1996). Subjective bioassays of small and large dosages seem to confirm this theory. Even larger doses (or prolonged use) release serotonin (5HT) and DA in the mesolimbic system. It is tempting to believe that it is this latter mechanism that is responsible for amphetamine psychosis. Some experiments with dogs clearly implicate dopamine with the syndrome. The role of 5HT is less clear.



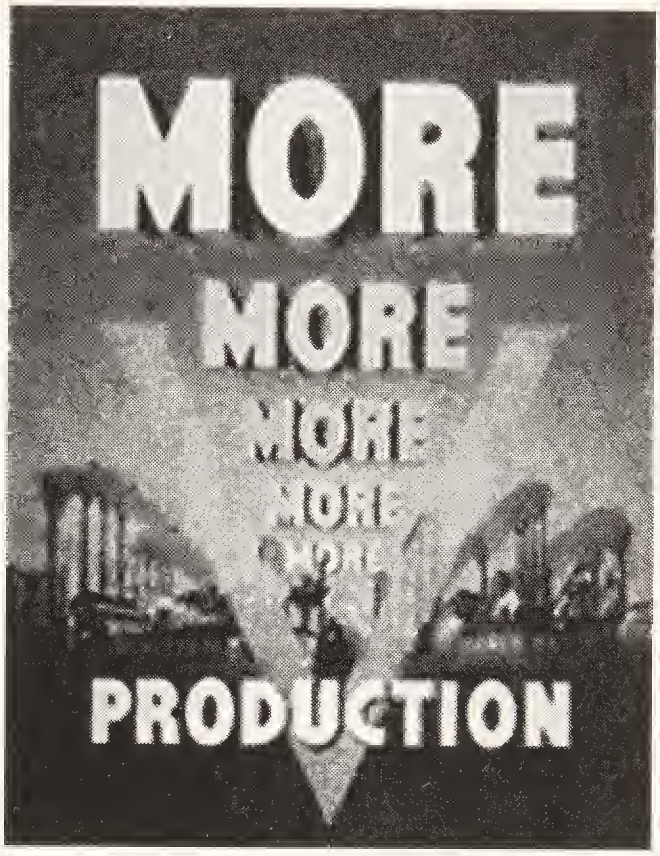
(S)-(+)-amphetamine



(S)-(+)-methamphetamine

Structurally, the methyl group on the α-carbon, the carbon nearest the nitrogen, tends to protect the molecule from being metabolized by monoamine oxidase (MAO), thus it stays in the nerve terminal longer and is able to mimic the endogenous catecholamines such as norepinephrine (NE) and dopamine (DA). The lack of a hydroxyl group on the β-carbon, the one nearest to the phenyl ring, makes the molecure more lipophilic and thus able to pass the blood-brain barrier and possess more central nervous system (CNS) activity (as compared to ephedrine) and at the same time have relatively less peripheral activity. Compared to *l*-amphetamine, *d*-Amphetamine has three to four times the central activity and slightly less peripheral activity. This also holds for the methyl analogs. But since the methylamphetamines have a higher ratio of CNS to peripheral activity than the primary amine anyway, even the *l*-isomer of desoxyn (as in, say, Vicks inhalers) is quite effective as an anti-fatigue medication even in small doses.

The Ally The worker's friend, but the boss's friend as well. You're putting out extra, ramping overtime, robbing your body to finish the shift. The boss meets his quota and pockets the surplus. Colonial bosses in South America paid their workers with coca.



U.S. GOVT. POSTER, 1942

Poesis Meth-heads despise *l*-Desoxyn, but ordinary people with long hours of physically demanding work get by as best they can. A couple of Vicks inhalers are cut open and the plugs are soaked in slightly acidified water (lemon juice will do). The plugs are further cut up and squeezed, and the liquid boiled to cook off the wonderfully fragrant essential oils. Some people filter them out using ordinary coffee filters, and skip the boiling, unless it is desired to concentrate the solution.

Effects Rampant paranoia. Bad-mouthing. Violence and generally unsocial acting-out. Complete loss of perspective. Burn-out, or full schizophrenic psychosis. Trouble.

Sleep. It's a good idea. Try some every day.

Amphetamine psychosis is real. It is significantly more prevalent in chronic amphetamine abuse than with cocaine abuse, but it seems that any stimulant can provoke it, including methylphenidate (Ritalin), ephedrine, and caffeine. Those with a history of schizophrenia are particularly susceptible—a single injection of methamphetamine can bring on a relapse in people taking antipsychotic medication. While amphetamine psychosis can be severe, full recovery can generally be expected with disuse of the drug and a few good nights of sleep.

A Yale study found that while amphetamine use in monkeys led to diminished capacity to learn, an experimental drug (unnamed in the article) that stimulated a dopamine receptor "succeeded in reversing the cognitive damage, apparently permanently" (Goldman-Rakic 1999).

Poesis

Under the rubric of the War against methamphetamine, legislation introduced in 2000 by Senators Hatch and Feinstein would make mere publication of information relating to manufacture (or use!) of methamphetamine or any other scheduled substance a felony. As to which restraints, if any, may legitimately be placed on the First Amendment, this may be debated. However, since such syntheses are easily available in books, journals, and on the internet, and in the spirit of patriotism, there are a few theoretical issues of interest to the student of chemistry that should be discussed here.

One popular synthesis uses pseudoephedrine, hydriodic acid, and red phosphorus. First, the optical rotation of ephedrine and pseudoephedrine depends on the position of the hydroxyl group on the β-carbon. Thus, while *l*-ephedrine (1R,2S) and *d*-pseudoephedrine (1S,2S) have opposite optical rotations, they both have the same absolute configuration on the α-carbon. *d*-Methamphetamine ('*d*-', dextrorotatory, is also signified as "+") also has (S) configuration on the α-carbon. Since the oxygen on the β-carbon is going to be removed by reduction, it follows, from first principles, that only the chirality of the α-carbon is of interest.

Pseudoephedrine dissolves in hot chloroform and can be recovered. The ratio of PE:HI:P that I heard was 40g:100ml:1g, but I have never been able to work that out stoichemically-it always seemed, just from balancing the equations, that the hot stuff should be doubled. The HI is present in excess. When the reaction completes (long reflux), and any excess phosphorus is filtered out, neutralizing the excess acid with NaOH will convert the product to the freebase, which can be extracted with an organic solvent and then precipitated with dry HCl gas.

> *But it's never quite that simple—there are traces of iodine to remove, and the pink glow of that damned red dye. It's really a lot easier just to buy some . . .*

According to Booth, *Inorganic Syntheses, Volume I,* HI is prepared by bubbling hydrogen sulfide through 150 ml. of water into which has been placed 120 g. of iodine. It has to be stirred, and the excess H2S should be vented into a flask with sodium hydroxide solution, with the exit tube just above the surface of the solution. The reaction takes about an hour. Filter out the sulfur, boil off the excess hydrogen sulfide, and collect the hydriodic acid that distills over at 125 to 127°C.

In the Midwest resourceful kitchen chemists have been using liquid ammonia and other readily available farm chemicals to synthesize methamphetamine, almost entirely in very small batches for personal use. All of the so-called "labs" that have been busted are so small they should more accurately be called chemistry sets. Recently, an in-your-face underground chemist named "Uncle Fester" has proposed a simple electrolytic synthesis. A video is available.

A few theoretical issues,

and an alchemical "found" poem.

Cooking up methedrine has served as a shakedown cruise for a number of budding chemists. Owsley, it was once rumored, got his start with meth. (But that's ancient history. These days they probably get started with GHB.)

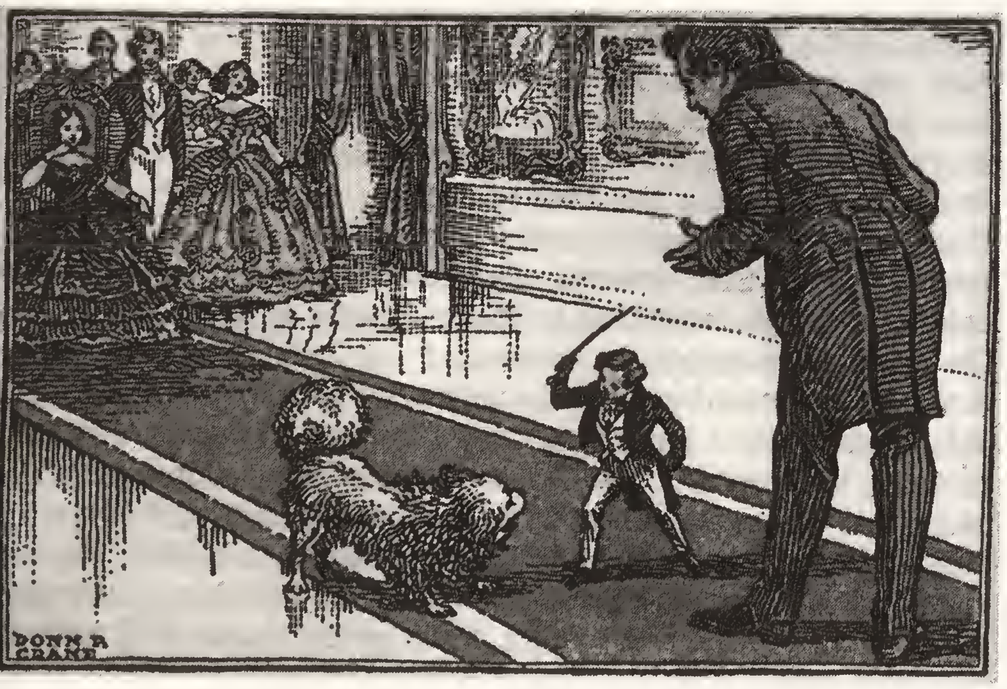
Gateway chemistry. Once you get hooked on flasks and beakers

it's either clandestine labs or grad school.

Matters of State and Liberty

Amphetamine abuse may be a significant societal problem, but, again, let's get some perspective. We're not talking about a *major* problem, such as half a million annual deaths from tobacco, or alcohol abuse, or poverty, or overcrowded classrooms, or the erosion of personal liberties. The governmental response to amphetamine abuse is excessive by several orders of magnitude, and has created worse problems in its wake. Peer group pressure was more effective in the sixties than all of the draconian government pogroms. Harm reduction should be the maxim, not incarceration. The easiest (and only) way to shut down illegal meth labs is to immediately move the amphetamines to Schedule III, so that they are easily available in pill form of appropriate dose to those who need them, with the goal of eventually moving to Schedule IV. We are not monkeys, nor rats. We are learning to live with much more dangerous substances and items of hardware without fascistic and highly expensive criminal measures. Societies are strongest when they are self-policing through custom. Self-policing is a learned behavior and self-policing should always be our stated goal.

> *The stimulants hold a particular horror for Consumerism because they resemble the macroeconomy so closely, because they are a kind of parody of the routine engines of desire.*
>
> *—David Lenson, On Drugs*

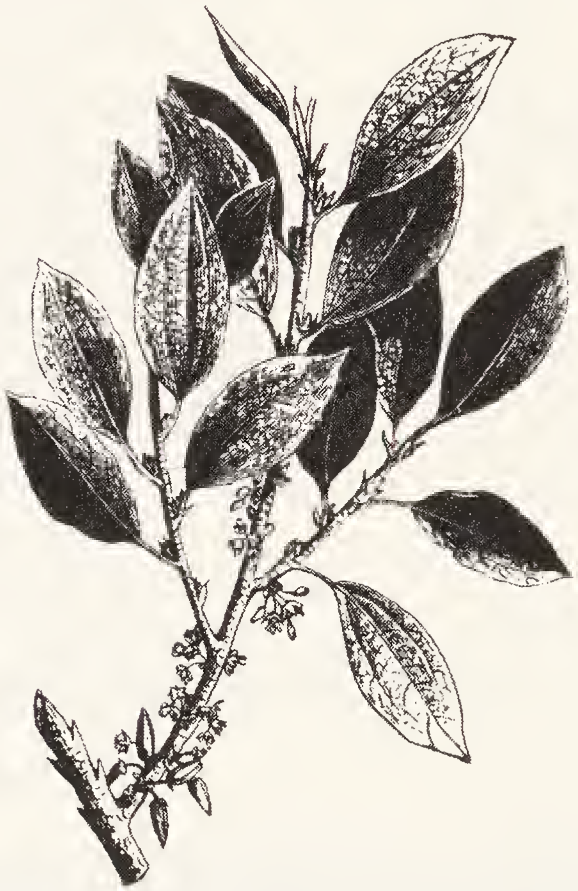


LESSON OF AUTHORITY,
CRANE, 1920

ERYTHROXYLUM COCA

Common names Coca. The principal active constituent, cocaine, extracted and purified, is commonly called "coke" in its hydrochloride form, and "base" or "crack" as the free-base alkaloid.

Taxonomy and Related Species Botanists have identified two hundred and fifty species of *Erythroxylum,* two hundred of them in the tropics of South and Central America, the remainder scattered through Madagascar and other tropical and subtropical areas of Africa, southeast Asia, and Australia. Only a few species of *Erythroxylum* contain cocaine, but related tropane alkaloids are common throughout the genus. Almost all *Erythroxylum* are shrubs or small trees.



ERYTHROXYLUM COCA,
ENGLISH, DATE UNKNOWN

All of the world's cocaine of commerce, both licit and illicit, is extracted from one of two or three pre-Columbian cultivars: *Erythroxylum coca, Erythroxylum novogranatense,* and *Erythroxylum novogranatense var. truxillense.* A fourth variety, *E. coca var. ipadu,* is grown by farmers on a small scale in the Amazonian lowlands. Neither *E. coca* nor *E. novogranatense* appears to occur in a truly wild state, although feral populations of *E. coca* are able to survive and reproduce. Feral plants differ little from cultivated plants morphologically, so selection does not seem to have been an important factor in the plant's domestication.

According to Timothy Plowman, the center of dispersion seems to be the *montaña* of eastern Peru, the wet mountains on the east side of the Andes. None of the four cultivars hybridizes with wild species of *Erythroxylum,* nor even with other varieties within the species. This genetic isolation underscores the great antiquity of *Erythroxylum* cultivation.

Erythroxylum coca var. coca, found in the eastern *montaña* from Ecuador to Bolivia, is called "Huánuco" or "Bolivian" coca. Huánuco has large, dark green leaves and a small, red, fleshy fruit that is killed by drying. The sensitivity of the berries to drying prevents their dispersal over wide distances. The richest area of cultivation is a valley in northeastern Bolivia called *Las Yungas de la Paz.*

Erythroxylum coca var. ipadu grows in the Amazonian lowlands. This plant is much smaller than its montane cousin, a shrub rather than a small tree, and has a much lower cocaine content. *Ipadu* is distinct from other varieties of coca in several ways. The fruits are rarely fertile, so it is propagated from cuttings. Since the cocaine content of the leaves is so low, the Amazonian peoples dry and grind the leaves into a powder instead of just putting them in their cheeks. One benefit of this method is that the leaf material is frequently swallowed, thus making the rich nutrients of the plant an important part of the native diet.

"Colombian coca," *Erythroxylum novogranatense,* grows, as one would expect, in Colombia, along the northern coast of South America, and also, formerly, if not today, in Venezuela, Central America, and the Caribbean. *Erythroxylum novogranatense* is bushier than *E. coca,* has smaller, lighter, more yellowish leaves, and is sometimes grown as an ornamental shrub. At one time there were large plantations of Colombian coca in Java.

On some of the smaller Caribbean islands, where the indigenous people escaped the genocide that decimated their relatives on most of the larger islands, coca is still chewed with the same veneration that was recorded in the logbooks of Spanish mariners half a millennia ago.

Colombian coca will withstand much hotter temperatures than Bolivian coca, and is more resistant to drought. Part of this resistance may be due to the extra oils and alkaloids present in the leaves, such as methyl salicylate, which give the leaves a characteristic sweet, wintergreen odor. It is *Erythroxylum novogranatense* leaves that are used in Coca-Cola (today de-cocainized). Colombian coca leaves have a higher percentage of total alkaloids than those of *Erythroxylum coca*, but because a larger percentage of the alkaloids are cocamines and hygrine, the amount of cocaine base is approximately the same.

The most economically important variety of Colombian coca is *Erythroxylum novogranatense var. truxillense.* Trujillo coca grows as a small tree, to nine or ten feet high, and has been grown in large plantations in the arid coastal valleys of Peru since prehistoric times. Trujillo coca must be irrigated.

Part Used The leaves, or the alkaloids extracted therefrom.

Chemistry In addition to containing cocaine, *Erythroxylum* is among the more nutritious of all Andean foodstuffs. One hundred grams of coca leaf contain more than 300 calories, 18.9 grams of protein, 42.6 grams of carbohydrates, vitamins A, E, and C, and one hundred percent of the RDA for calcium, iron, phosphorous, and riboflavin.

The alkaloid content of coca leaves varies between 0.7 and 1.5 percent, depending on the variety, Bolivian coca bearing one-half to one percent, and Colombian coca (both varieties) one to two and a half percent. Seventy to ninety percent of the total alkaloids of Bolivian coca is cocaine. For Colombian coca this figure is only twenty to fifty percent. The cocaine content of *ipadu* is only one-fourth or one-half of one percent, dry weight.

How Taken

Chewing coca leaf is an acquired skill requiring some experimentation and practice to perfect. First off, of course, the leaves are not actually chewed any more than is "chaw" tobacco. Mastication is employed to soften and form the leaf mass into a quid that is then kept in the cheeks.

Coqueros in the Andes carry their supply of coca leaves in a woven bag called a *vicuña* or *chuspa*. Along with the bag there is some other container, often a gourd, to hold the lime paste. A stick is dipped into the lime, and then transferred to the quid with a deft twirl.

The chemically astute student of psychopharmacology might wonder why lime would be applied to the leaves. After all, lime will convert the cocaine to its freebase form, which is insoluble in water. On the contrary, it might seem that exactly the opposite would be preferred: some lemon juice to convert the cocaine to the water-soluble salt. But the *coqueros* have perfected their technique: by keeping the cocaine in its freebase form, it is absorbed directly through the lipophilic bucal membranes in the cheeks, bypassing the stomach and the digestive system completely. *Coqueros* believe that the effects of sucking a coca quid without lime are different from the effects obtained with lime. It is possible that the gastric juices in the stomach convert much of the cocaine hydrochloride into ecgonine and benzoyl ecgonine.

Coqueros don't add lime to their quids if they are sitting still. Without lime, the effects are said to increase alertness, but without physical restlessness—lime is saved for physical activities. By adjusting the balance between leaf, lime, saliva, and air, the skilled *coquero* can derive a spectrum of effects, and select the one appropriate to his particular situation and state of mind and body.

The Plant

Over a large part of South America coca leaves are at the heart of native culture. In many countries in South America the leaves are sold openly and legally; coca tea is the national beverage of Bolivia, and is regularly served to tourists in the Andes as a remedy for *siroche* (altitude sickness). As food, as medicine, and as a central ritual of communal spirit, the sacred leaves have proven themselves for five millennia to be beneficial allies.

In the northern countries, by contrast, cocaine seems to exaggerate Western "individualism." All too often, cocaine users isolate themselves from their neighbors, their responsibilities, and finally from their own medicine. They turn their backs on the Quest, and behave as if this white crystal were the Great Stone.

DONN P. CRANE

CATCHING THE SUN,
CRANE, 1920

Effects, the Leaves

The first effect, with the smallest dosage, is a heightening of mental alertness.

> *If you use the powdered leaves,* ipadu *style, but mostly swallow the material instead of leaving it under the tongue with lime or soda, it can come on so slowly you don't realize it is there—until someone asks you if it's working.*

Coqueros usually prefer the weaker but more flavorful Colombian coca when it is available. Plenty of alkaloid, either way. Some of the skill in chewing is learning how to avoid getting over-stimulated, with all of its associated unpleasantness. North American cocaine heads might profit from the examples of these lifelong coca afficionados.

> *Gentle, an embracing warmth, a feeling*
> *of vigor and attentive concentration.*

Some anthropologists and sociologists have written that native coca chewers do not get "high," that the quantities of coca consumed are too small to bring on the cocaine "euphoria." And for some reason, if there are no euphoric effects, native use of the sacred leaf is somehow more "acceptable." This thesis is nonsense on both counts. Two ounces of dried coca leaf, often reported as a day's ration, would contain around 600 milligrams of cocaine—not an insignificant quantity. Experienced coqueros control the strength of the effects closely, and if they really want to feel good, they'll add a little extra lime.

> *Like a pixie-dust screen covering your face: everything you look at or think about has a hint of a sparkle.*

The question as to why our culture finds good feelings, "euphoria" if you will, morally tainted is difficult. Some of the answer may have to do with a different tree, a Tree in Genesis. Some of the answer has to do with the War of Poisons—the worldwide struggle for dominance among the intoxicants (in this model the vested economic interests of human corporations are merely doing the bidding of the underlying will-to-power of the "poison"). Some of the answer has to do with dualism, that the spiritual and material planes are separate and antithetical.

> *Or maybe it is because Euphoria is the name of our culture's True God, and to utter or display it nakedly is blasphemous.*

Effects, the Crystals

Highly dependent upon the mode of ingestion, and the quantity of the material. The first effect, with the smallest dosage, is a heightening of mental alertness. With cocaine hydrochloride, you can get this with the "matchhead" dose.

Stronger doses bring on the distinctive cocaine "euphoria." Reaction time and muscular strength improve.

> *The psychic effect . . . consists of exhilaration and lasting euphoria, which does not differ in any way from the normal euphoria of a healthy person. . . . One senses an increase of self-control and feels more vigorous and more capable of work. . . . One is*

> *simply normal, and soon finds it difficult to believe that one is under the influence of any drug at all.*
>
> *—Sigmund Freud*

Pharmacology

With large doses, intellectual alertness and skill become, if anything, warped, rather than further enhanced.

The actual molecular mechanisms of cocaine's action is not completely understood. Cocaine affects both norepinephrine and dopamine, but just how it accomplishes this is still being investigated. Some believe that cocaine inhibits the reuptake of dopamine, thus creating a surplus, but it also seems that this is less true of cocaine than it is of amphetamines. Andrew Weil suggests that if cocaine is absorbed slowly, as would be the case with chewing coca, the principal effect would be on norepinephrine, resulting in muscular stimulation and alertness, while sudden high doses, characteristic of crystalline cocaine snorted or, even more, smoked, would accentuate dopamine effects, including euphoria. This is an attractive theory, but it is not completely supported. Grinspoon suggests that cocaine may not actually affect dopamine receptors directly, but may bind to nearby receptors, and as a side-effect alter the shape of the dopamine receptor enough that its binding potential is increased.

The net result, regardless of the particulars of the process, is stimulation of the central and peripheral nervous systems.

> *The rush, the warmth, the clarity, the extra vigor.*
> *How fun to sit and talk. And the great sex.*
> *At least at first.*

Black market cocaine contains, in addition to any adulterants, several other alkaloids found naturally in the coca plant, mainly cocamine, hygrine, and ecgonine. Cocamine, or truxilline, refers to a group of five stereoisomers that are closely related to cocaine molecularly, but having very different pharmacological properties. Cocamine acts mainly on the muscular system. Hygrines are volatile oils, sometimes described as having the odor of cat urine. They have very little psychoactive properties. If the cocaine is extracted properly from the leaves, there will be little hygrine. Unfortunately, if the jungle cooks try to precipitate that last one percent of cocaine from the solvent by adding extra hydrochloric acid, the hygrines also precipitate. Worse, the acid decomposes some of the cocaine into ecgonine, which has only a fraction of the potency of cocaine. Ecgonine and benzoylecgonine have a characteristic wintergreen-like smell, and are found in much higher concentrations in Colombian or Peruvian coca, *Erythroxylum novogranatense*, than in Bolivian coca, *E. coca.*

The Ally

> *The "INTELLECTUAL BEVERAGE" and Temperance Drink contains the valuable TONIC and NERVE STIMULANT properties of the Coca plant and*

Cola nuts, and makes not only a delicious, exhilarating, refreshing and invigorating Beverage (dispensed from the soda water fountain or in other carbonated beverages), but a valuable BRAIN TONIC, and a cure for all nervous affections.

—Coca-Cola advertisement, 1887

How Taken

The refined hydrochloride salt of the alkaloid is insufflated into the nasal passages and sinuses. The alkaloidal free base may be smoked. Coca leaves may also be smoked, and coca cigars have been used as a tobacco substitute as well as for treating coughing and asthma.

The range of self-administered cocaine dosage is astonishing: at least two thousand percent, and probably up to double that: from a matchhead to a quarter teaspoon. Cocaine use has been correlated with increased risk of heart attack. Considering the whopping quantities often ingested by users, it's no wonder.

But bigger and bigger doses don't seem to DO bigger, or better.

And then there are the flipped out.

Where satiety seems impossible. Bingeing. This behavior is so commonly associated with freebase or crack cocaine that we must call it "characteristic."

The Plant

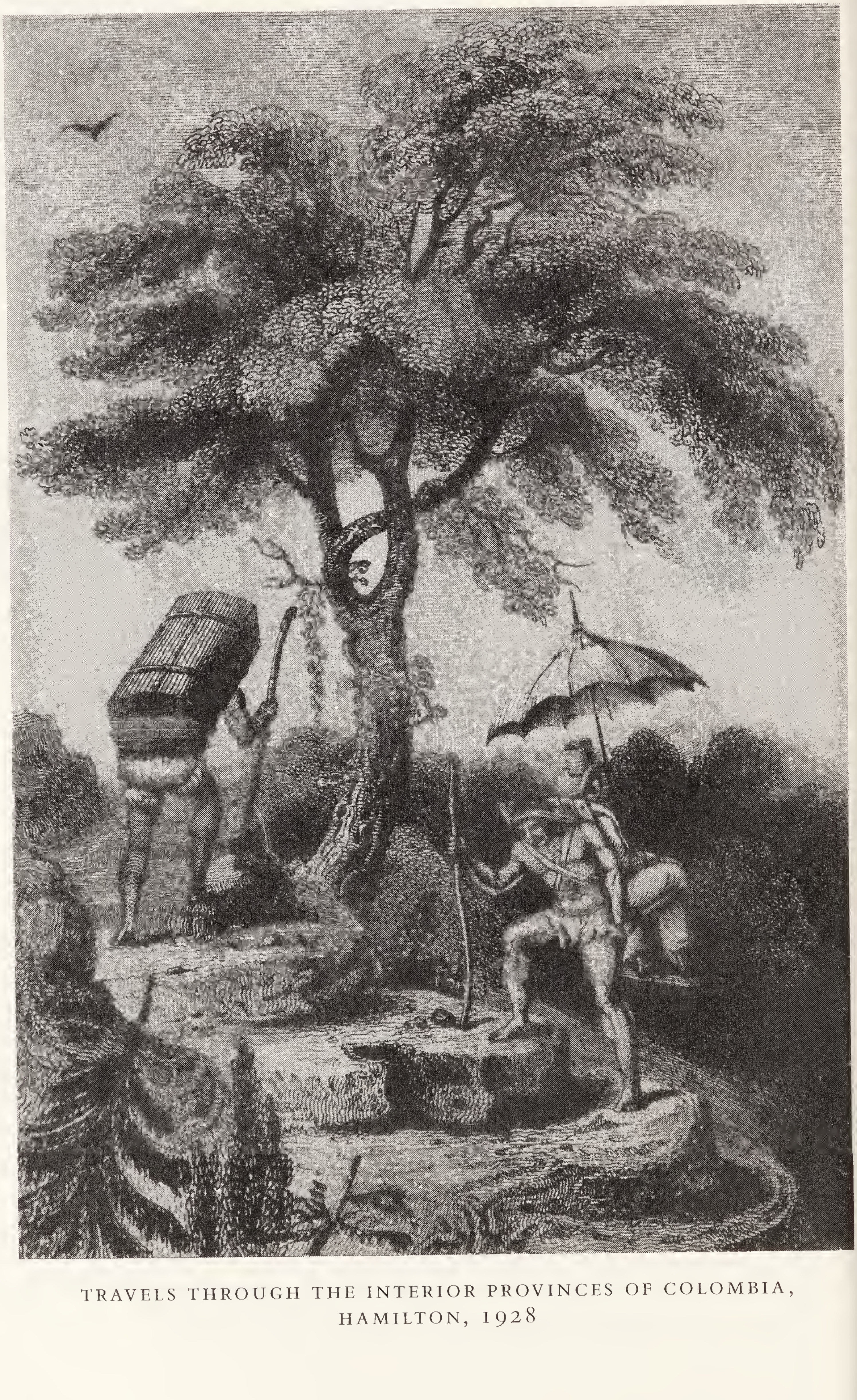
Our Lady of Yongas

And all my days are trances;
And all my nightly dreams
Are where thy dark eye glances,
And where thy footstep gleams:
In what etherial dances,
By what eternal streams.

—Edgar Allan Poe

Mama Coca has been cultivated for at least five thousand years, and probably for seven thousand. Coca is an Aymara word that means "tree." *Mama* is Quechua, used as a term of reverence for female divinities as well as with the meaning of "mother," so "Holy Tree" is one possible translation. But the etymology is not completely clear, especially since "coca" is a loan word. Antonil, in his excellent book *Mama Coca*, points out that the Kogi, two thousand miles away from the Inca's capital in the central Andes, use the word mama as a title for male shamans, and suggests that the "Mama" of Mama Coca may derive from an earlier adjectival or compound modifier of coca, such as *mamosh* coca, or *mumush* coca. These terms refer to *Erythroxylum coca,* the "original" coca of the Eastern slopes of the Andes. The important point is that "Mama Coca" can refer to a goddess, to a particular idol or shrine guarding a coca patch, or to the plant itself.

Such is the nature of the Ally.



TRAVELS THROUGH THE INTERIOR PROVINCES OF COLOMBIA,
HAMILTON, 1928

The Ally

She can bewitch. She can seduce.
She is not shy. She likes to dance
and to have you with her, by her side,
when she greets the sun.

The Plant

All of the peoples who grew and chewed (or smoked) coca have stories of its origin. One story tells that people learned of the beneficial properties of coca by watching llamas, who were eating the leaves with obvious fondness, a story reminiscent of the discovery of coffee. In the Incan story, Viracocha, the child of the sun who gave the Incas knowledge of agriculture and language, also gave them the coca plant. The coca plant's gift was to assuage the hungry, to give vigor and strength to the tired and weary, and to let the unhappy forget their miseries.

But the Incas were latecomers, imperialistic conquerors who took over the land and culture of the peoples they subjugated. One of the first things they tried to do was to keep all of the coca for themselves. Only the nobility were allowed coca. At the time of their own subjugation by the Spanish conquistadors, although the law against coca use by commoners may still have been "on the books," there was no longer very much effort at enforcement.

The most widespread of the origin myths involve a woman. In one version the woman is an adulteress.

Adultery is to alter (as, to corrupt, to adulterate).
Altering your consciousness as adultery.
Was the punishment for transgressors stoning?

They cut the woman in half. The coca tree grew up out of the place they buried her body.

And there was a woman with coca leaves growing in her long hair. Or, again, a young man who seduced a woman he found by the river. He kissed her and swallowed her saliva, which was green.

Sometimes the coca plant grows up from a finger that breaks off of a woman giving birth, the same way, it is said, that men obtained the ayahuasca vine.

The Ally

Loss of periphery. Maybe like being pushed on roller-skates, so that you have to focus completely straight ahead: you don't have time to look around and you don't (or can't) stop.

We could call it "ego-centronic," just the kind of behavior our culture rewards.

unless you get caught!

That is, the results are rewarded as long as they don't know how you got there.

The Plant

A Coca-Cola sounds pretty good right now.
Sure sounds a lot better than Jolt.
And better for you physiologically.

But the jewel of coca beverages was *Vin Mariani:* coca wine.

> *Today my blood is,* si, *tired—*
> *necesito* Vin Mariani.
> *Care to join me?*
>
> *. . . she wrote.*

Angelo Mariani was a Corsican chemist. In 1869 he patented an infusion of coca leaf extract in wine. The idea was not completely new—Wine of Coca had appeared in a few pharmacopeia—but Mariani was a marketing genius. By 1890 Vin Mariani was one of the best known and widely used tonics in the world. Mariani sent free samples of his product to artists, statesmen, composers, writers, and the crowned heads of Europe, asking for a testimonial in exchange. The luminaries responded, and Mariani filled thirteen volumes with glowing testimonials.

The list of fans reads like a who's who of the late nineteenth century, including three popes and sixteen kings, queens, or heads of state. Thomas Edison was particularly effusive in his praise, and Vin Mariani aided Edison in his regime of working long hours with only a very few hours of sleep each night. H. G. Wells liked it. Emile Zola liked it. Jules Verne liked it, and stated that he had drunk at least twenty-seven bottles of Vin Mariani wine when he sent in his testimonial. Sarah Bernhardt appeared on Mariani's posters. Pope Leo XIII sent Mariani a gold medal, and Cardinal Lavigerie wrote him that his coca had given European priests the strength to civilize Asia and Africa.

> *Ahhhh, civilization. Meanwhile, in South America . . .*

Mariani stressed that his product was not made with cocaine (he called cocaine "dangerous"), but with coca leaves. He recommended three glasses a day, and suggested using his tonic for a wide range of complaints, including influenza, nervousness, anemia, impotence, stomach and digestive problems, and melancholy. And certainly for "tired blood."

In addition to Mariani Wine, the company produced a coca lozenge, an elixir, a pastille, and a very strong coca tea, to be taken by the spoonful.

> *Maybe what America needs is a good coca chewing gum.*

In 1886, John Pemberton, a pharmacist in Georgia, was inspired by Mariani's Wine to concoct his own stimulating tonic: Coca-Cola. The original Coca-Cola was based in French wine and was advertised as a tonic for headaches and as a stimulant. A few years later it was reformulated without the wine, with caffeine-containing Kola nut extract and marketed as a "temperance" drink. Pemberton sold his drink to Asa Candler in 1892, who substituted soda water for plain water, and Coca-Cola was recognizably in its present form.

> *Except it was better—a LOT better.*

The soda water in Coca-Cola is why soda fountains are part of American drug stores.

The Ally

> *I am just now busy collecting the literature for a song of praise to this magical substance.*
>
> *—Sigmund Freud, letter to his fiancee Martha, 1884.*

Freud began using cocaine hydrochloride in 1884, and continued using it for at least ten years. After 1895 there is no more mention of cocaine in his writings. But by 1895 using cocaine would not be something that a psychologist seeking acceptance for his radical and controversial views might want to be associated with. Nowhere does Freud speak or write about life without cocaine. On the contrary, if we might make inference, the presence of mama coca, at least in spirit, pervades much of Freud's later work.

FREUD

Über Coca was Freud's first major book. It is a well-written and enthusiastic account of both cocaine and the coca plant, and stands as a model for many papers written since. Freud begins with a botanical description of *Erythroxylum coca,* and the use of the plant in South America, including the legend of Manco Capac. He continues his account with the uses of cocaine in Europe, his own research, and outlines possibilities for future use and research of cocaine, both medical and non-medical (he includes its use as an aphrodisiac). Freud hoped that *Über Coca* would make him a name, and it did, though not exactly as he had intended. The paper certainly made a name for cocaine, and Freud has been called the "rediscoverer" of cocaine.

For information about coca, Freud relied heavily on the work of Paolo Mantegazza, an Italian neurologist. Mantegazza, who published a paper in 1859 about the medicinal properties of the coca leaf, was enthusiastic about his own experiences with coca. Not long after Mantegazza's essay was published a German chemist isolated the principal active alkaloid from the leaves, cocaine. When Freud began his researches, cocaine was available in a number of forms from a couple of pharmaceutical firms, but had little market (and little interest). Freud's paper changed this, and Parke-Davis marketed cocaine in a number of forms, including fluid extract, coca wine, coca cordial, cocaine inhalant, and as cigarettes and cigars, mixed with tobacco.

Freud first experimented by taking cocaine orally, in water:

> *A few minutes after taking cocaine, one experiences a sudden exhilaration and feeling of lightness. One feels a certain furriness on the lips and palate, followed by a feeling of warmth in the same areas. . . . It seems to me noteworthy—and I discovered this in myself and in other observers who were capable of judging such*

> *things—that a first dose or even repeated doses of coca produce no compulsive desire to use the stimulant further; on the contrary, one feels a certain unmotivated aversion to the substance.*
>
> *—Sigmund Freud, Über Coca*

Freud outlined a number of uses for cocaine:

> *a) as a stimulant, for hysteria, hypochondria, melancholic inhibition, stupor, and neurasthenia;*
>
> *b) for digestive disorders of the stomach, such as dyspepsia, and over-eating;*
>
> *c) for cachexia, ("Long-term use of coca is further strongly recommended in all diseases which involve degeneration of the tissues, such as severe anemia, phthisis, long-lasting febrile diseases, etc.")*
>
> *d) for morphine and alcohol addiction;*
>
> *e) for asthma;*
>
> *f) as an aphrodisiac;*
>
> *g) as a local anesthetic.*

Freud even entertained the idea that cocaine might be a "source of energy." He cited one experiment in which two animals, one with cocaine and the other without cocaine, were starved in a laboratory cage, and that they both succumbed. But against this experiment he mentioned the historical "starvation of La Paz," where those who used coca survived while the abstainers did not. Freud mentioned how the nervous system can affect the body's use of nutrients and energy, that psychological factors can cause a man to lose weight, and that it is quite possible that cocaine could enable the body to metabolize nutrients more efficiently.

Freud performed experiments to measure the perceived increase of muscular strength after taking cocaine, using a device of his own construction to measure strength of grip. He performed a similar experiment to measure reaction time, using another home-built apparatus that oscillated 100 times per second. The devices were accurate enough to show that there was a natural daily fluctuation for both parameters, and that individual disposition had a large effect on the benefits derived from the cocaine.

> *At present it is impossible to assess with any certainty to what extent coca can be expected to increase human mental powers. I have the impression that protracted use of coca can lead to a lasting improvement if the inhibitions manifested before it is taken are due only to physical causes or to exhaustion.*
>
> *—Freud p. 64*

Freud's unreserved embracing of cocaine is most characteristic of the Ally. As a poison doctor, he was still a novice.

The Plant

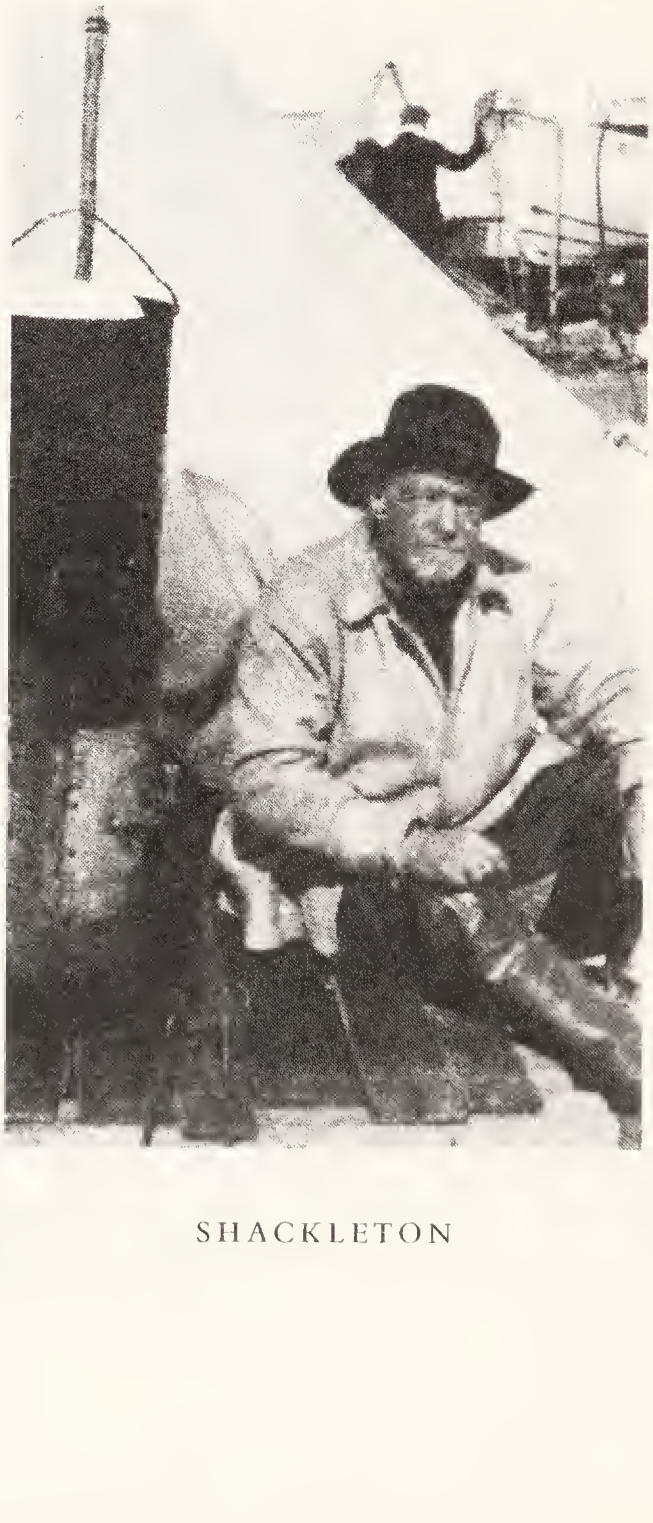
Our Varicocha first this Coca sent,
Endow'd with leaves of wond'rous Nourishment,
Whose Juice Succ'd in, and to the Stomach tak'n
Long Hunger and long Labour can sustain;
From which our faint and weary Bodies find
More Succor, more they cheer the drooping Mind,
Than can your Bacchus and your Ceres join'd.

—Abraham Cowley

Signatures The biosynthetic precursor of cocaine is putrescine, a double amine formed by the decarboxylation of ornithine, an amino acid.

Americans learned about putrescine in 1862 from the nearly four thousand human bodies left decomposing on the fields around Shiloh Church after two days of fighting. Twenty years later, ill and in need of money to care for his family, Ulysses S. Grant drank Mariani's cocaine tea every day to give him the strength to write about the battle in his memoirs.

The Ally Ernest Shackleton's reputation for endurance and long marches is legendary. Probably England's greatest polar explorer, in 1909 Shackleton and his party came within one hundred miles of reaching the South Pole but ran out of food. To reach a distant food depot, they had to make long hikes in bad weather pulling sleds on their emergency rations alone. The emergency rations were called "Forced March" tablets. They were cocaine, and they swallowed them once every hour. Shackleton didn't lose a man.


SHACKLETON

The Plant *Erythroxylum coca* is almost a perfect crop plant. It will thrive on poor soils and steep slopes. The seedlings are planted out when they are sixteen or eighteen inches high, are ready for their first harvest in a year and a half, and can then be harvested four times a year for forty years or longer. The plant has great natural resistance to most insects, especially ants: cocaine is a potent insecticide.

An Amazonian moth, *Floria,* feeds upon the coca plant as a defense against predators. The larvae concentrate so much alkaloid in their bodies that they actually excrete significant quantities of cocaine.

Bug juice, anyone?

Signatures When the Incas conquered their neighboring peoples along the Andes, they appropriated the coca plant for themselves. Again, the signature of excitantia is intertwined with imperialism and militarism. The Incan royalty had so much hubris that the fourth Incan ruler named his queen "Mama Coca." That one hundred Spanish cutthroats were able to topple an empire stretching a thousand miles should not be surprising to any student of tragedy. The Spanish conquerors were more pragmatic: they gave their enslaved workers coca instead of food.

. . . for thy sake alone
The spacious World's to us by Commerce Known.

—Abraham Cowley

Toxicology While reserpine blocks the action of amphetamine by releasing the dopamine stores in the granules, it does not affect the action of cocaine. This suggests that cocaine acts as a reuptake blocker. Dopamine is only released when the synapse is active.

Cocaine is also an MAO inhibitor. This often over-looked feature of cocaine may explain why some shamans in northern Chile say that their hallucinogenic *Anadenanthera* snuff (or smoke) is only effective if one chews coca first.

Cardiovascular effects of cocaine are minimal and difficult to correlate, but recent studies indicate that the risk of heart attack is increased ten to twenty-fold during the first hour after ingesting cocaine. Still, death from cocaine overdose is rare, especially considering the extent of cocaine abuse in the United States and other countries. But the risk should not be minimized.

Evidence is accumulating that the presence of alcohol in the body interacts with cocaine in deleterious ways. Cocaine forms different metabolites when alcohol in present and cocaethylene, in particular, may increase the incidence of sudden death from heart failure.

High temperatures, especially direct flame, applied to freebase cocaine (as is common when smoking "crack") create several chemicals of unknown toxicity, which may contribute to the deleterious effects of ingesting cocaine through this method.

Cocaine is a superior local anesthetic: a tiny crystal can have miraculous effects when removing painful splinters from children. Cocaine has been largely replaced by the synthetic lidocaine in dentistry, but recent research strongly implicates lidocaine as a carcinogen. Cocaine would be safer.

Chronic overdosing of cocaine often produces paranoid and irrational behavior. Long-term effects (five days) of muscular and nervous depression are seen in animals, especially amphibians. Cocaine can suppress REM sleep. At high doses, cocaine probably augments the synaptic action of norepinephrine.

Withdrawal creates depression. Dopamine and serotonin levels drop. Catecholamines levels also fall, which may be why those in recovery often have intense cravings for tobacco.

The Ally In low doses, a most remarkable and effective stimulant; at high dosage, an indulgence, a hedonism extremely risky for anyone on the path of knowledge.

> *And there is Sagredo, horns showing through his mad hair,*
> *mocking my words:*
>
> > *I mean, like, except at parties, right?*
> > *I mean, really, man, I mean.*

The gradual and unobtrusive effects of coca leaf chewing can be closely simulated by blowing a matchhead line of cocaine. Or you could put a like quantity inside your lower lip along with a tiny amount of baking soda. Or you could make a dilute solution and use an atomizer as a nasal spray.

> *Or you could spray the solution onto some mint leaves, add a little bit of lime and, like, chew for real.*

It is getting more difficult to be serious.

> *Cocaine makes me feel like a new man, and he wants some too.*
>
> *—Richard Pryor*

Signatures Nothing is easier. Than to use stimulants habitually.

History Before 1900, cocaine was widely available in patent medicines for a wide variety of ailments and complaints, as well as in Coca-Cola and Vin Mariani. Anti-cocaine sentiment began developing around the turn of the century, especially in the South, where it was feared that cocaine would incite "Negroes" to attack whites. Newspapers published accounts of "Negroes" on cocaine who had superhuman strength and were impervious to bullets. One southern police department changed from .32 caliber to .38 for just that reason. Similar sensationalist stories appeared in the nineteen-seventies, about PCP.

> *"Cocaine . . . increases pistol marksmanship, creates*
> *superhuman strength, cunning, and efficiency."*

Passage of cocaine prohibition laws in the South coincided with the passage of segregation laws, a rash of lynchings, and general high visibility of the Ku Klux Klan. By the late twentieth century the racist program had been expanded and refined, and was able to use the powers of state and Federal government. Lynching was replaced by shooting, and segregation effected by massive imprisonment on a scale beyond any other country in the world.

BULUC CHABTAN,
MAYA DEITY OF WAR
AND HUMAN-SACRIFICE

At the turn of the Millennium, one-quarter of all the prisoners in the world were incarcerated in the United States. More than sixty percent of these prisoners were incarcerated for non-violent crimes, mostly drug offenses. The cost of incarcerating the non-violent offenders exceeded the total Federal spending for welfare programs by fifty percent. One in three black men between the ages of 20 and 29 were under some form of criminal justice control in 1991. In some states, up to forty percent of African-American males have lost their right to vote.

—Justice Policy Institute, 1999

In spite of hundreds of billions of dollars spent on the war on drugs and all its attendant social miseries, cocaine is still widely available on the black market and has not risen in price. The war on drugs has had no effect on the availability of cocaine. (In 1999, the Spanish Navy seized ten thousand kilos of cocaine, the largest cocaine seizure ever in Europe.) If North Americans have tempered their use of cocaine, it is certainly not for any lack of availability, nor, I would say, because of offensively simplistic propaganda campaigns such as DARE. It is because society, through experience, has come to a fuller understanding of, and respect for, the coca ally.

The Plant Nowhere are the differences between plant and chemical more pronounced than with coca and cocaine. Indians in the high Andes chew the leaves almost continuously, with few, if any, ill effects. Some studies have found the health of the coca chewers to be better than that of the control groups. Contrast this with purified cocaine. And especially with the freebase form used for smoking. Characterized by increasing dosage to the point of nonstop preparation: filling the pipe, smoking the hit, and thus repeating until some overwhelming force, such as running out of crystal, intervenes. Stark personality changes, almost entirely for the worse. Loss of productivity, loss of center, loss of perspective, loss of soul and shadow.

> *Can't you write in sentences anymore? Is this your brain getting in touch with your subject matter?*

And what irony that outlawing the plant and leaves, more than anything else, drives the outlaw industry that cooks them into powder.

First step:

> *Free the outlawed plants.*
> *Amnesty for prisoners of the drug war.*

Instead of Coca-Cola and Vin Mariani, we have crack.

History In the mid nineteen-seventies cocaine was enjoying the greatest popularity, prestige, and good press that it had received in many years. Drug researchers who studied cocaine users reported that, for the most part, the benefits of cocaine use outweighed the dangers, and were even saying that cocaine was not addictive. It was chic to snort a line at a party.

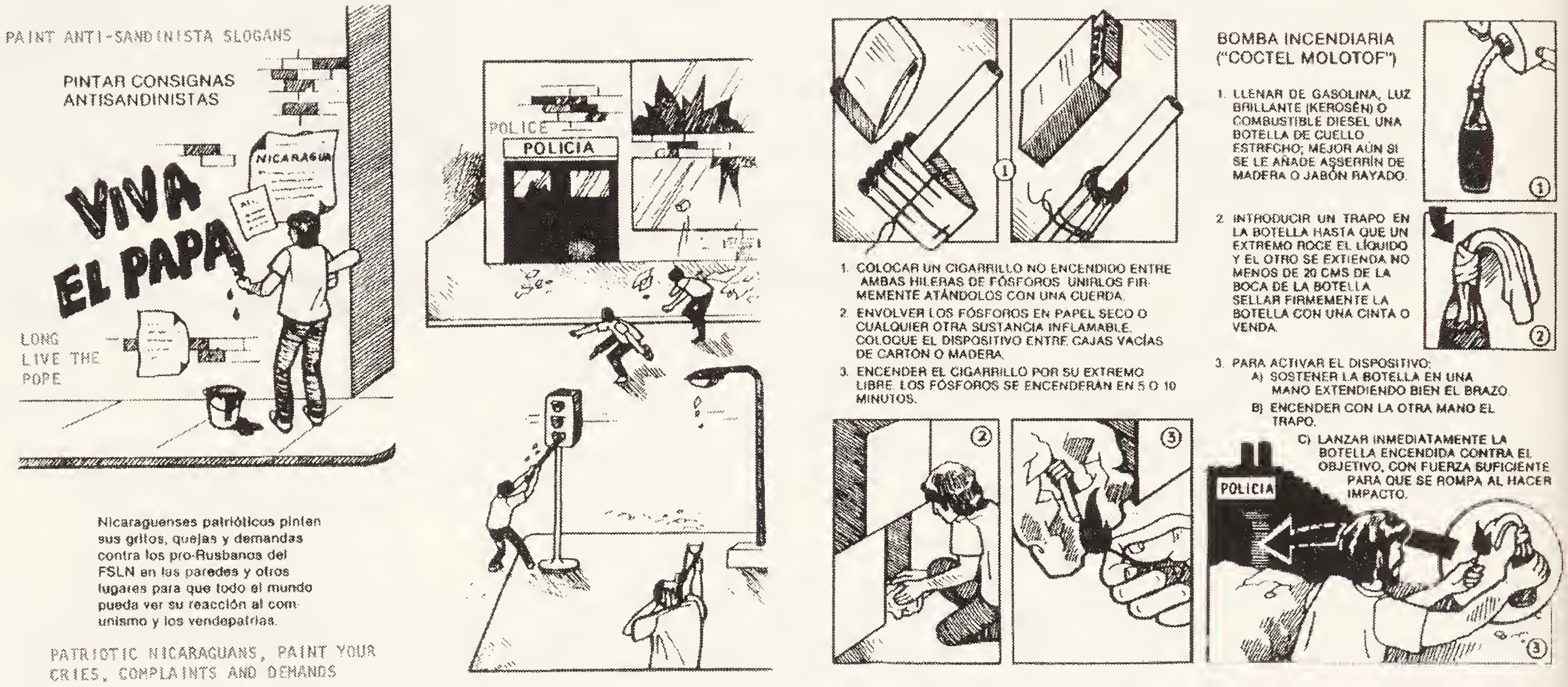
And fun.

THE SOCIAL MASQUERADE, BEARDSLEY, 1894

But in the cocaine exporting cities of South America, such as Lima and La Paz, doctors were reporting a new and disturbing phenomenon: habitual smoking of alkaloidal cocaine paste. Smokers, often from the middle or upper middle classes, were doing things like quitting medical school, stealing from their families, and generally ignoring everything except *base* smoking, even things like eating. As paste was almost never seen in the United States, some chemically aware researcher on the West Coast began converting the hydrochloride salt back into alkaloidal cocaine, which, with its low melting point, could be vaporized and inhaled. Some of the chemical expertise of cocaine freebasers was probably learned from having to repurify the adulterated cocaine that was common in the black market in those days. Ronald Siegel, who had been following the lives of ninety-nine cocaine users for four years, noted in 1979 that six of them had become confirmed freebase smokers. Robert Byck, testifying before Congress in 1979, warned that such confirmation was characteristic—that smoking cocaine was different from snorting cocaine, that the Government had a chance to head off a disastrous epidemic if it would launch an educational campaign, but that if it didn't stop lying about powder cocaine, nobody would listen to any warnings about freebase. Nobody stopped lying, and nobody listened. The popularity of freebasing continued to grow, mostly among the well-to-do (such as Richard Pryor, who set fire to himself in a freebasing-related solvent explosion in 1980). Smoking cocaine seemed to elicit craving and binge behavior with an immediacy and persistence not even matched by heroin.

Around 1979, the year the Sandinistas defeated the Guardia Nacional and overthrew the Somoza regime, a new method of preparing freebase cocaine was invented in California: basifying with baking soda. The advantage of the new method was that no solvents were required. The whole process could be done in water. Adding baking soda to an aqueous solution of cocaine hydrochloride precipitates the base. Boiling off the water leaves chunks of cocaine base mixed with the baking soda: "rocks." The water can be boiled completely off, or the precipitates can be filtered and dried. Either way, you get handy chunks of cocaine-soda in an ideal size for smoking and marketing. But it took a few years for crack to take off. For one, the price of cocaine had to drop. And that required the collusion of governmental agencies. Cocaine was still a rich man's drug.

NICARAGUAN PATRIOT:
TO SABOTAGE
THE MARXIST TYRANNY
IS TO VINDICATE
SANDINO'S MEMORY.
LONG LIVE FREE NICARAGUA!


PAINT ANTI-SANDINISTA SLOGANS
PINTAR CONSIGNAS ANTISANDINISTAS
NICARAGUA
VIVA EL PAPA
LONG LIVE THE POPE
POLICE
POLICIA
①
②
③
BOMBA INCENDIARIA ("COCTEL MOLOTOF")
POLICIA

Nicaraguenses patrióticos pinten sus gritos, quejas y demandas contra los pro-Rusbanos del FSLN en las paredes y otros lugares para que todo el mundo pueda ver su reacción al comunismo y los vendepatrias.

PATRIOTIC NICARAGUANS, PAINT YOUR CRIES, COMPLAINTS AND DEMANDS

1. COLOCAR UN CIGARRILLO NO ENCENDIDO ENTRE AMBAS HILERAS DE FÓSFOROS. UNIRLOS FIRMEMENTE ATÁNDOLOS CON UNA CUERDA.
2. ENVOLVER LOS FÓSFOROS EN PAPEL SECO O CUALQUIER OTRA SUSTANCIA INFLAMABLE. COLOQUE EL DISPOSITIVO ENTRE CAJAS VACÍAS DE CARTÓN O MADERA.
3. ENCENDER EL CIGARRILLO POR SU EXTREMO LIBRE. LOS FÓSFOROS SE ENCENDERÁN EN 5 O 10 MINUTOS.

1. LLENAR DE GASOLINA, LUZ BRILLANTE (KEROSÉN) O COMBUSTIBLE DIESEL UNA BOTELLA DE CUELLO ESTRECHO; MEJOR AÚN SI SE LE AÑADE ASSERRÍN DE MADERA O JABÓN RAYADO.
2. INTRODUCIR UN TRAPO EN LA BOTELLA HASTA QUE UN EXTREMO ROCE EL LÍQUIDO Y EL OTRO SE EXTIENDA NO MENOS DE 20 CMS DE LA BOCA DE LA BOTELLA. SELLAR FIRMEMENTE LA BOTELLA CON UNA CINTA O VENDA.
3. PARA ACTIVAR EL DISPOSITIVO:
   A) SOSTENER LA BOTELLA EN UNA MANO EXTENDIENDO BIEN EL BRAZO.
   B) ENCENDER CON LA OTRA MANO EL TRAPO.
   C) LANZAR INMEDIATAMENTE LA BOTELLA ENCENDIDA CONTRA EL OBJETIVO, CON FUERZA SUFICIENTE PARA QUE SE ROMPA AL HACER IMPACTO.

SABOTAGE MANUAL, PUBLISHED BY THE CIA
AND DISTRIBUTED THROUGHOUT NICARAGUA, C.1980 (PP. 8 & 14)

When the Reagan/Bush ticket took over the White House from Jimmy Carter, the bullies and hit men of the Somoza regime who were hiding out in Guatemala took heart. The socialist-minded Sandinistas were labeled Communists, and Somoza's ex-police and mercenaries were suddenly called "freedom fighters."

The United States had supported Somoza for years, both militarily and with foreign aid, but with the Sandinistas in power, Reagan cut off all aid to Nicaragua and began actively supporting the *Somocistas*, probably the most widely hated political group in Central America. By 1981, the CIAs role in arming, supplying, and directing the Contras was secret but official. The CIA objective was to destabilize the Nicaraguan government by any means possible, including disinformation, bribery, torture, terror, bombing, and armed invasion. By the end of 1982, the CIA direction of the Contras was no longer secret. Someone at the CIA, allegedly William Casey himself, leaked the story to *Newsweek*. The response from the Congress was overwhelmingly negative, one congressman calling the *Somocistas* "vicious, cutthroat murderers." On Christmas Eve the House passed the Boland amendment, specifically prohibiting the use of taxpayer funds to overthrow the government of Nicaragua, by a vote of 411 to 0. In July of 1983, the

House passed another resolution to cut off all aid to the Contras, military, humanitarian, or otherwise.

The White House, in total disregard of Constitutional authority, decided to continue to support the Contras clandestinely, and placed the project in the hands of a Marine lieutenant colonel, Oliver North, and the National Security Council. North's efforts to continue supplying the Contras with arms and money led to trading weapons to Iran, also specifically illegal, and drug smuggling on a massive scale. Some of the story came to light during the Iran-Contra Hearings in 1987, and more came out in the Kerry Committee Hearings of the same year. Kerry uncovered direct links between drug dealers and the Contras. Pilots admitted to flying weapons down and cocaine back. Even the DEA station chief in Costa Rica admitted to Kerry that the Contra supply infrastructure was being used to smuggle drugs. But Kerry's report was hushed up. It took an investigative reporter named Gary Webb (1998) to fill in the blanks and the documentation.

The major Nicaraguan players were Enrique Bermúdez, CIA agent and supreme military commander of the Contra FDN; Norwin Meneses, recruiter and arms supplier for the Contras and a long-time drug trafficker with close ties to Bermúdez, the Colombian Cali cocaine cartel, and later the DEA; and Danilo Blandón, head of the Los Angeles cocaine distribution ring. Blandón originally worked for Meneses, but later struck out on his own, eventually becoming a DEA informant and set-up man. Meneses himself, who had been Blandón's supplier, said that between 1980 and 1991, Blandón moved more than 100,000 pounds of cocaine, well over a billion doses. Blandón's main dealer was a remarkably enterprising young African-American man named Ricky Ross. Ricky's first distribution network targeted South-Central Los Angeles, where he lived, but he later branched out nationwide. The Nicaraguans also sold Rick and other inner city dealers weapons, surveillance equipment, and other military technology generally only available to governments. The large influx of money and guns into South-Central Los Angeles fueled the growth and power of two street gangs, the Crips and the Bloods. Rick Ross became a multimillionaire and built up a mini-empire, buying real estate and businesses. Blandón served as his father figure and advisor.

The whole operation was protected, as much as such things can be, by Contra supporters in the CIA, the DEA, and the White House. By 1985 regular one thousand kilo shipments of cocaine were landing at Carswell Airforce Base in Texas. Oliver North and the CIA had adjoining hangars. Guns and food were flown south; cocaine, and sometimes marijuana, were flown north. Government involvement ranged from direct collusion to looking the other way to squelching criminal investigations, all in the name of national security.

Most of this was no secret on the streets. In the nineteen eighties, prices for cocaine were at an all time low. Many politically aware people stopped using cocaine just because they didn't want to help the Contras.

The Contra drug ring had not invented crack, but crack served so many reactionary purposes that somewhere in a smoke-filled room, evil-minded men must still be clinking their glasses of scotch and congratulating themselves. In addition to funding the Contras, crack was a white smokescreen hiding the greatest rip-off of public and corporate money and Constitutional civil liberties in American history. With the collusion of the press, particularly the television media, crack became the scourge of the land. Any talk of legalizing outlawed plants such as marijuana was lost in the new crack terrorism. Crack was blamed for all of the social ills of poverty: it was the greatest red herring since, well, the Reds. No one looked at the gutting of social programs and the decline of public education. That the richest of the rich, the top one half of one percent of Americans, were increasing their ownership of the total wealth from 24% to 36% was relegated to the back pages: crack was on page one.

Prisons became America's largest growth industry. Horror story followed horror story. Tougher crime bills were passed. The courts relaxed Constitutional due process restraints until "good faith" was all that was required of the police to seize (and keep) personal property. Rules of evidence were relaxed. It was war, the war on drugs, and nothing was too severe or cruel or excessive for punishing the drug user.

Unfounded stories appeared about "crack babies." Newscasters claimed that the millions of babies being born to "crack mothers" were destined to be tomorrow's delinquents: anti-social retards beyond hope of redemption from either medicine or education. So why bother to fund health care for the poor or schools, or special education?

Except that it was all baloney. It was LSD chromosome damage all over again. None of the studies on "crack babies" that the headlines were based on had cross-checked for alcohol abuse, tobacco use, poverty and malnutrition, or the lack of prenatal care—all factors which since have been proven much more significant on infant health than cocaine use by the mother. Many kinds of drugs can affect an unborn infant. Do not misunderstand: toxic substances, whether legal, prescription, or illicit, are best avoided by pregnant women. But the placenta is much more effective in protecting a fetus from cocaine than from alcohol or many other drugs.

THE NEW YORK SOCIETY FOR THE SUPPRESSION OF VICE

Sentences for crack were much stiffer than sentences for cocaine hydrochloride: a gram of crack was considered one hundred times more dangerous than a gram of coke and was given a proportionately longer sentence—that is, you got the same sentence for one gram of crack as for one hundred grams of cocaine. In reality, since Freeway Rick figured out how to triple his profits by adulterating his crack with lidocaine (a known carcinogen), there probably was more cocaine in a gram of hydrochloride salt than in a gram of crack.

Ross was finally busted in 1987 by the LAPD. The detectives paid Rick a visit in his jail cell and bragged about how they had set him up, how much time he would do, and how they'd beaten up his brother. The conversation was tape recorded, and when a judge heard it, he threw out the case. Ricky decided it was time to go straight and moved to Cincinnati, but Blandón tracked him down and eventually persuaded him to return to the business. Ricky did, and was arrested again a year later. This time the cops beat him up on the spot, and, again, it was their undoing. The FBI called on Ricky to be a star witness in an investigation of corruption in the Los Angeles Police Department. The investigation uncovered that the police beat suspects, sold confiscated drugs, planted drugs on suspects they wished to arrest, laundered money, and evaded paying their income taxes. In exchange for his testimony and cooperation, Ricky Ross's sentence was cut from ten years to fifty-one months, and after a year in prison he was released.

Ricky again vowed to go straight. He'd used his jail time to learn to read and write and had obtained his high school equivalency certificate. He used his money, his reputation, and his properties to set up youth centers and other neighborhood and community services in South-Central LA. Rick even got a job. But the DEA wasn't through with him. They had been able to turn Blandón into an informant, after arresting him on cocaine charges that he probably could have beaten. Blandón looked up his old protégé, gave him a hard luck story about how he needed money to pay off an old debt to some Colombians, and convinced Ricky to run a deal with him. Blandón set up a sting using DEA cocaine, and Rick Ross was given life without hope of parole.

The Ally

And so, the young man is seated,
he chews the coca leaves,
he knows how to toast the coca,
he knows how to strain the coca,
he knows how to pound the coca,
he knows how to speak.
He grows up like his father,
he searches,
and what he searches he finds.
Such was the good word in former times,
the word of coca and the word of tobacco.

—Hipólito Candre (Witoto), The Word of Discipline

The War

A decade ago, poet Peter Dale Scott predicted that the war on drugs would be used as an excuse for military intervention in South America. The passage of a military aid package for Colombia in the year 2000 for more than a billion dollars fulfilled his prediction. Perhaps the most sinister twist was a proposal to use the dangerous Fusarium fungus as biological warfare to kill coca, poppy, and marijuana plants. The plan is to infect grass seeds with the fungus, which then could be dropped from high altitude planes. The grass would then spread the infection to the crop plants. The fungus can survive in the soil for as long as five years.

As Noam Chomsky points out, many more people die in Colombia from American drugs than die in America from Colombian drugs. Does this give Colombia the right to make air strikes in Kentucky and Virginia?

Signatures

> *"Which is it today," I asked, "morphine or cocaine?"*
>
> *He raised his eyes languidly from the old black-leather volume which he had opened.*
>
> *"It is cocaine," he said, "a seven-per-cent solution. Would you care to try it? . . . I suppose that its influence is physically a bad one. I find it, however, so transcendently stimulating and clarifying to the mind that its secondary action is a matter of small moment."*
>
> *—Arthur Conan Doyle, The Sign of Four (Watson and Sherlock Holmes)*

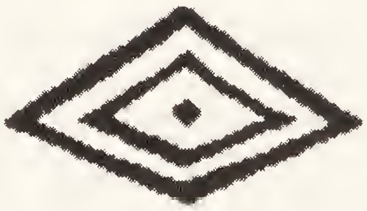
The Plant

The sacred leaves are used for divination in several ways. It is said that witchcraft is a province of *brujos* and *brujas,* but that coca divination is for anyone.

> *One method involves body twitching. A large quantity of coca is ingested and a bundle of the leaves is brushed over different parts of the body—over the calves, parts of the calves, placing the questions on different parts of the calves and watching to see which parts twitch.*

Other methods involve the leaves themselves. The easiest way is just to throw the leaves onto a blanket: the answers are in the positions and alignment of the leaves. Sometimes the leaves are crumbled in the hand.

Another method uses the quid. A chewed leaf is pulled out by the stem and the querent studies the shape of the veins. One coquero divines by the bitterness of the quid: a bitter taste denoting a negative answer and a sweet taste indicating a positive answer.



EYE OF THE
MEDICINE MAN

The Ally

So, it is said that
when a young man, for the first time,
chews coca,
and prepares tobacco,
he
prepares it watchfully
and he talks, alone, to his father.
"I want to learn all that there is in the heart of the Wise One," he says,
"I want to learn the spells of life that are in the heart of the Wise One."
Well then, the father tells him,
"If you sit down, if you stay watchful, then you will feel it."

Well then,
the one who chews coca for the first time
truly believes in that,
because he wants to learn about that.
Well then, he works the tobacco, he works the coca;
and once he has his own plants of tobacco and coca,
now he searches.
He searches, and with those two
he gets drunk,
because it is said that these teachings are in the heart of the Wise One.
Well then, with that, he keeps chewing,
he keeps getting drunk with tobacco.

Out of the forbidden place,
truly now, I obtained this word,
and today I am relating it this way.
And he who does not know says it is not true;
he might say so, but this word has power, has substance,
has breath—
these are Things of power.
And it might seem
that one is a sorcerer,
that one has supernatural abilities,
it is just the word of the discipline of coca,
the word of the discipline of tobacco.

So that later,
when your children are born, you can tell them.

—Hipólito Candre (Witoto), How We Were Formed
by the Word of Tobacco and Coca

STEALING FROM TOMORROW

A peculiar clean taste, slightly chemical, but not unpleasant. Once you taste it you'll never forget. Nothing else quite like it. Treble notes. Trace of metallic, trace of bitter. Tongue numb. Maybe it's what sweet would be without sugar.

Seems like a convenient mode of ingestion for small quantities.

Keep wanting
to get back
to where things were clear.

"So good that if you use it once you're hooked." Talk about good advertising! Did the cartels pay for that line?

◆

The free amine base is simply prepared by basifying. The rule of thumb that alkaloid salts are water soluble and the bases oil soluble holds well for cocaine. A few drops of ammonia in an aqueous solution of the salt precipitates the base. Extract the base with petroleum ether (not diethyl ether) or naphtha.

Add a layer of the solvent, cap the container, and shake: when the solution turns clear the precipitated base has dissolved in the solvent layer. Draw off the solvent layer with a pipette (like, an eyedropper) and squeeze into a wide, flat-bottomed dish to evaporate off the solvent. The crystals are quite beautiful.

This much is well documented.

The first flash is the best. Never
quite that good
after.

The fleeting quality of the hit . . . how an interruption, a word or request from someone else, the telephone ringing, your spouse wondering about the shopping, any outside engagement can dispel the brief enchantment.

So you try to avoid the interactions.

You go again, but as the metabolic half-life of the coke far outlasts the duration of the rush, the stimulant continues to build up in your system. So you need a downer. Something to take the edge off. Some way to get leveled.

We're talking poisons here. But poisons going nowhere.

But you do it some more. We can call it an Experiment.

Finally you do it even when you don't like what it does to you. You get too much edge. You get too many jaggies. So maybe you take something to take the edge off. Speedballing. Except maybe you take slightly more than you needed because you wanted to feel it and now you are drowsy, so you toke some more crack, or base. That puts you too far on the stimulated side, so you try the cycle again. Eventually you get leveled.

Brain won't work. Too jumpy to read. Too bored to do nothing.
Toke.

Plenty late enough to go to bed. Just one more hit. Just one more lift. Maybe a small one this time.

Small one didn't do it.

Siren,
you hide your pain in the blinding whiteness
of your crystals. You hide the night.
Already I can feel it: tasks undone,
papers left scattered. A slow accumulation
of flotsam. Or a word too sharply spoken.
A craving that calls me, through any job or meeting,
during an evening with friends,
from my bed where I went thinking to sleep.
So quickly she makes her bed in your ear,
but she is not the singer, she
bringeth not the lyre, but the lie.

◆

To keep the vapor
from condensing in the stem
I warm it first,

moving the pipe
back and forth slowly
over the flame

trying to heat
the whole pipe
evenly.

Brushing the long stem with a flame must be the lightest way to touch something. It's like polishing, or cleaning.

You can see the spots
that haven't gotten hot enough
from the crud and stuff
in the pipe. Stroke
the bowl a few times
and then come back
to the stem, twist
a little left or right
to try to get
the sides. Wait till
it's all hot to
put the sustained
heat to the bowl.

I like to see
the crystals melt
before emptying out
my lungs, exhaling, then
three or four
final stem passes,
back to the bowl
and inhale slowly, you want
that vapor to hit
the bottom of your lungs, pal,
then hold it in,
and hold, or even when
you can't anymore just
breathe shallow.

The flame is like a brush. It bends when I move the lamp. I can bring the lamp around and along the stem and the flame tip follows precisely, always a little bit behind.

like a tongue tip, lightly licking all along it.

You love it. You want to do it again and
morning comes again and ever
so closer and ever and
I still haven't slept.

◆

If I could just find some activity that didn't require concentration.

Morning is morning, but now is now. Should quit this stuff soon.

Freebase is the hardest substance to leave in the cupboard that I know of. That doesn't mean you can't quit, you can. But you're going to have to leave town.

Buying in small quantities is safest.

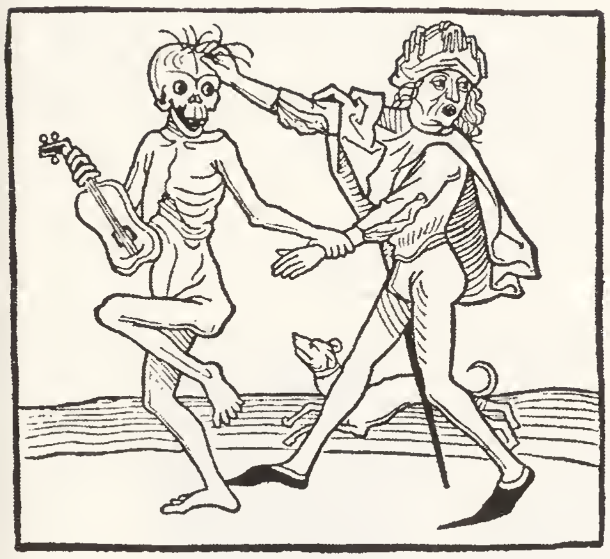
No. There IS no "safest."

Coke can overpower the Critic, but in whose service? It can put aggression on auto-pilot, a much-valued state of mind in our culture, but in whose service?

◆

It turns out that stealing from tomorrow is just the first stage.

Stealing from tomorrow is like going into debt, spending tomorrow today, or tonight, actually. So you've wrecked tomorrow. Stolen all of its energy, stolen its waking hours, stolen its good will. Tomorrow you will be behind all day.



DEATH AND THE GENTLEMAN,
H. KNOBLOCHZER, 1490

If you get up at all!

After stealing from tomorrow for long enough,

weeks, maybe for months,

you start stealing from today.

Stealing from today means that the ally is not giving you power or aid or assistance in accomplishing some task. Rather, the ally takes today for her own service. Ingestion, filling the bowl, the preparation, the scoring. And just the time taking the hits. A little bit of time to space, to flash or level, and that's about it for today.

Just the worship service.

Weren't you supposed to get something from all of this?

You're doing your part for her. That's for DAMN sure!

But you're not at the end.

Next is stealing from yesterday.

The third stage of the ally's conquest.

Your savings, your bank accounts—nothing very esoteric there.

Sometimes your friends. Sometimes your marriage.

Sometimes your children.

Your reputation.

And your memories.

Nothing very esoteric there.

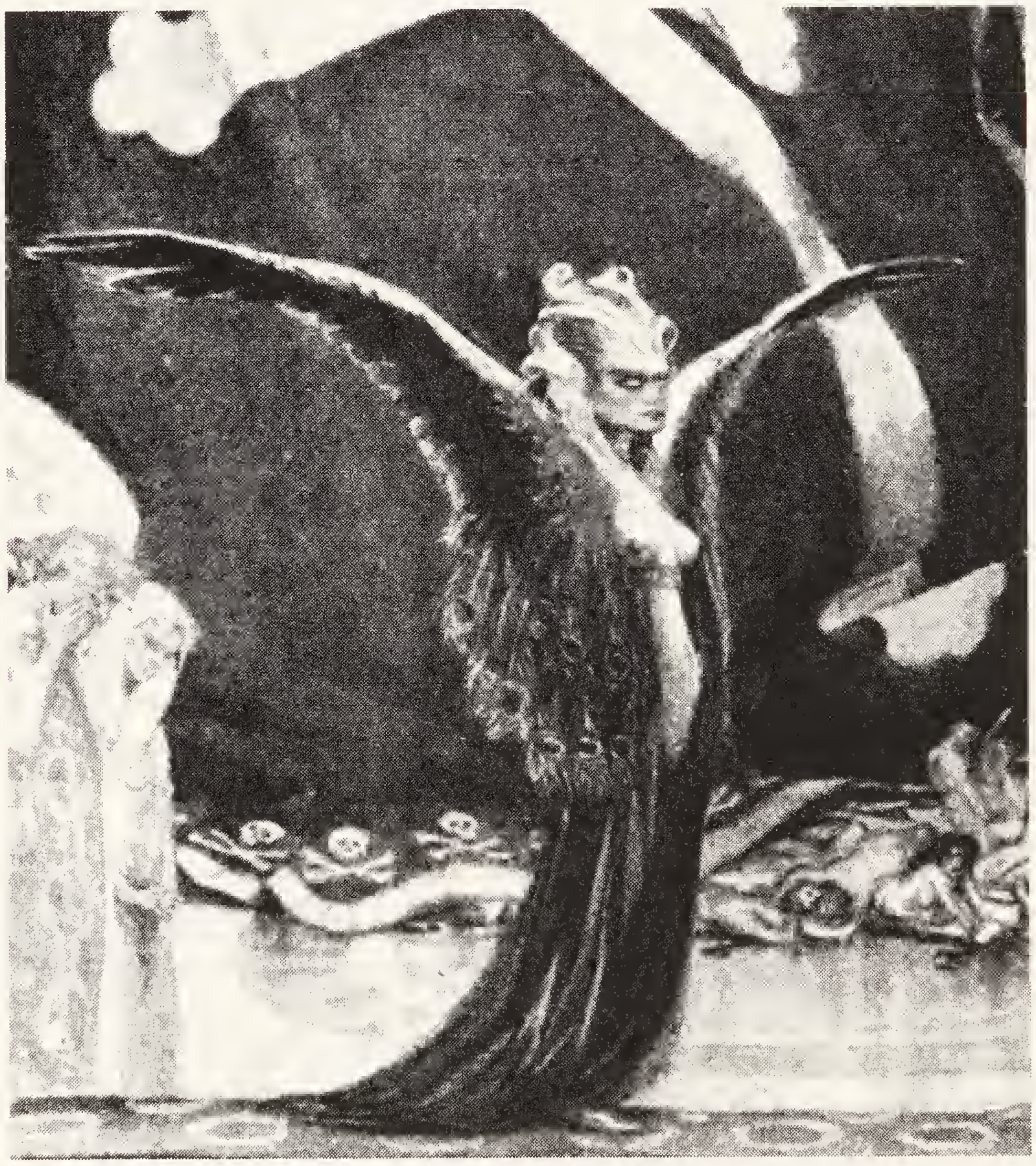
◑

Perhaps the best writing on the effects of cocaine is by David Lenson in his book *On Drugs*. Lenson writes about the "runaway engines of desire." He suggests that the American power structures reacted with such intensity and virulence against cocaine because cocaine presents such a clear image and parody of consumerism. You buy it, it's gone, more makes you want to buy more. But buying cocaine is buying the desire itself, the desire itself is the product. A devilish perfection.

The desire, the consumerism, is too blatant, too obvious: a parody of the holy rite, and hence condemned with all the fury of the Inquisition.

> *A citizen set fire to a house because it was a "crack house." Though he admitted setting the fire, the jury found him not guilty, using jury annulment: an auto-da-fé for the Holy Cause is not crime.*

◑



THE CONQUEROR WORM,
FRANTISEK KUPKA, C.1900

THE FALL OF THE MAGICIAN (DETAIL), BRUEGEL, 1564

The hard part.

You do it instead of eating.
You do it instead of sleeping.
You do it instead of doing.

The hard part.
is stopping, sitting down.
The hard part,
the hard part concerns time.
The hard part is just sitting,
without inspiration,
with no ideas and not knowing . . .

No, that's not it. Lots of ideas.
The hard part is doing it.
And there is so much to do:
much more than you have time to do.
It's easier to keep the accelerator pressed
and to keep rushing, touching this, touching that,
and to keep doing that.

The hard part is quitting.

Clear enough?

◑

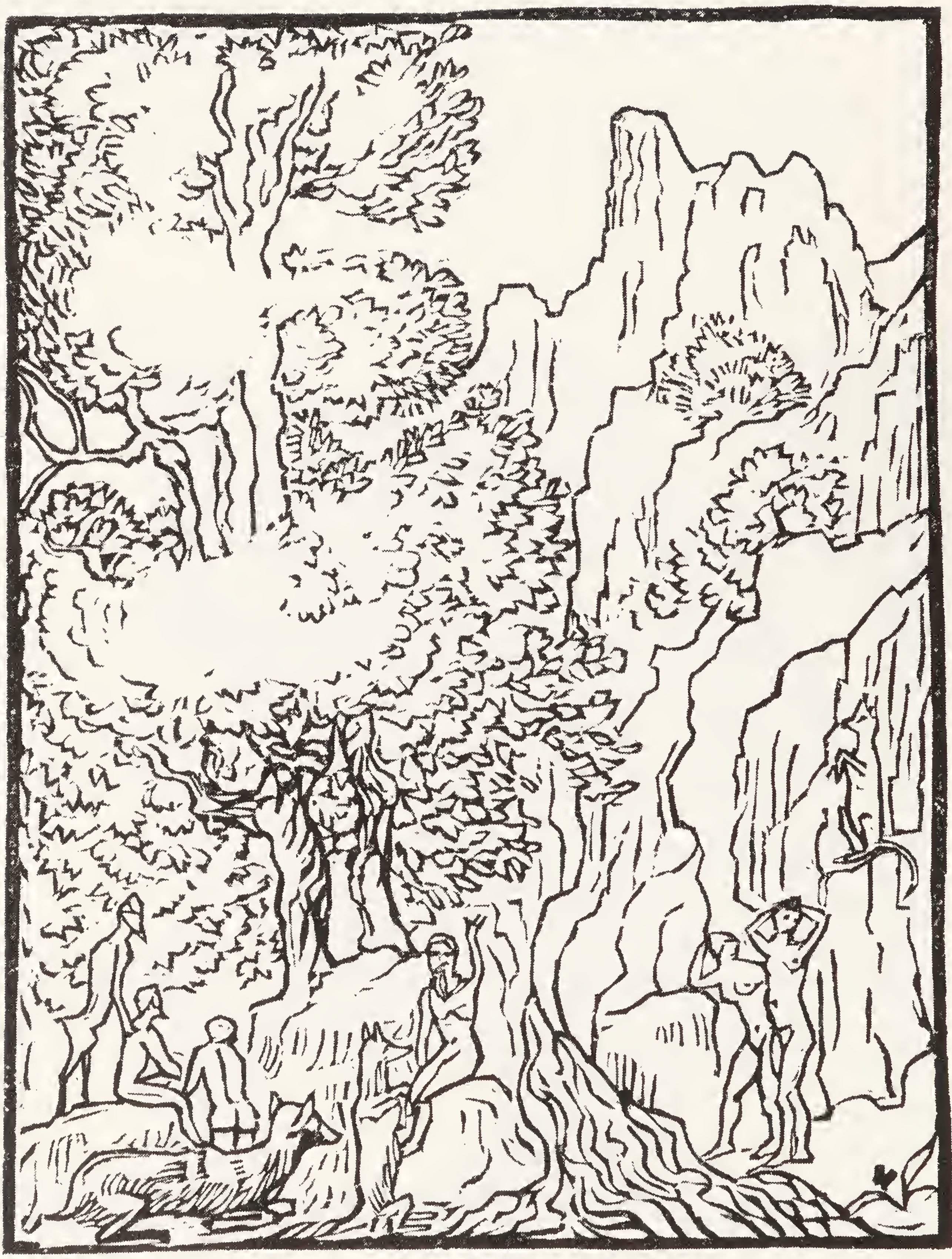
Dopamine levels crash during withdrawal. A dopamine agonist of the D2 receptor attenuated withdrawal symptoms in mice, while an agonist aimed at the D1 receptor made withdrawal pains worse.

Another researcher said that both agonists and antagonists block the ill effects of craving: so that it is a change in the firing patterns that creates the unrest, not a simple decrease.

The hard part.

> *It is also true that anyone who has used stimulants may learn from the experience, although this knowledge may be distressing. A kind of wisdom can be gained from witnessing the voracity of human desire at its uttermost, and from understanding one's own fundamental corruptibility in the face of it.*
>
> *—David Lenson, On Drugs*

There is a spring. It comes out of the rocks on a high ridge dividing two great watersheds. The water is very cold and is pure beyond any other. It may be the only thing in the world that is not poison. It is surely the only thing in the world that can save your life. I'm not going to tell you where it is, but you know how to find it.



ARISTIDE MAILLOL, 1926

WANDERING AND THE VISION QUEST

SHAMAN, C.1700,

I want to speak now of a certain curious phenomenon found among the Pit River Indians. The Indians refer to it in English as "wandering." They say of a certain man, "He is wandering," or "He has started to wander." It would seem that under certain conditions of mental stress an individual finds life in his accustomed surroundings impossible to bear. Such a man starts to wander . . .

He will speak of what is on his mind to no one, but anyone can see that he is not all right. He is morose, uncommunicative. Without any warning he will get up and go. People will probably say of such a man: "He has lost his shadow."

Wandering is something that may unfortunately befall any man or woman, and it can take many, many forms. It may end up in complete loss of soul, and lingering death. Or it may result in temporary madness.

To [the wanderer], the mysterious powers, the Tinihowis, (we might call them genii) are whimsical spirits living in the woods and entirely indifferent to the affairs of the Pit River Valley. In order to gain their friendship, in order to approach them without scaring them away it is necessary to become wild oneself, it is necessary to lose one's own humanhood and become as wild as possible, as crazy as possible. Haunt lonely, desolate places. Act like a madman, throw rocks about, yell and dance like a maniac, run away when anybody comes. Climb awful mountains, climb down the rim of crater lakes, jump into the silent cold water, spend all night there.

When you have become quite wild, then perhaps some of the wild things will come to take a look at you, and one of them may perhaps take a fancy to you, not because you are suffering and cold, but simply because he happens to like your looks. When this happens the wandering is over, and the Indian becomes a shaman.

—Jaime de Angulo

Sometimes you can't afford to wait until you are ready. Sometimes you just have to go. Sometimes it is like you are treading, just treading water and getting tired. Sometimes you just gotta go.

When I got into my car and took off down the road, I gave no thought to returning. I had reached a point where desperation overshadowed responsibilities.

—Steven Foster

You can't wait. If you were ready why would you need to go? I mean who is ever "ready," really? If everyone waited until he was ready, no one would ever go.

Maybe the readiness is the going. Or the going is the ripeness and the goneness is the readiness. Either way that's all,

he wrote.

◆

Two more miles of sawtooth ridge—
an hour of sunlight
to reach the lake

Sweating from every pore. Started too late, much too late.
Didn't leave any margin.
It got hard. Sun started setting.
But made the lake, finally, at dusk.
Dropped my pack, threw off my clothes, dove in.
Ice.

A war cry helps.

Heya Ho! It is a good day to die.

Something to help get over the energy barrier. Or the barricade.

Chickamauga!

Glacier lake, into the lake.
The Waters of Life.
Wash away the day, many days. How many days?
No towel. Goose-bumps.
Climb back up the hill to make camp in the last of the light.

And alone. The quiet.
A trout jumped.
Thought of Nick Adams.

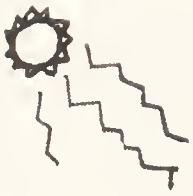
and that was
a long, a very long time ago.

Old friends begin returning.

◆

There are two vision quests: the young person's quest for identity and passage into the world of adults. And then another in mid-life, for the healer or singer, for the rattle-woman.

For the desperado.



The second one is different.

Red fir belt.
Ground cover dry, even the buckwheat
pink and crisped.

Exhaustion is part of it. Four days of writhing and weeping:

IVORY DOG-SLED HANDLE,
BERING SEA ESKIMO, 1870

sweating poison,
the coke and the junk,
whatever you've collected—
the anger, or the booze,
the pain, the broken heart,
from your mourning, moon-child,
from your grieving—
sweat it—
welcome the long night,
and with the dawn rub ashes
into your hair.

Mere convalescence won't cure it. Something must be risked.

Now you find out if you have luck—if you have nurtured it back into friendships the past twenty years or so—or whether you squandered. Whether there is enough muscle left in your legs and enough breath left in your lungs. Luck is a habitual kind of thing.

Bear is here. In the east. With the moon on her back.

Can't sleep. Every thought that I'd ever thought came by one more time and waved "hello." The moon came up. The air is warm enough. Naked. Put shoes on. Go.

I'm too old
to spend a sleepless night
alone on a moonlit
mountaintop.

I want that bear.

◆

There are three parts to the Quest here: power, vision, and confirmation.

The power part is about strength: returning to the body, cleansing, rebuilding muscles, sharpening reactions and coordination; recovering your wind and your endurance, your inner strength and your confidence.

Finding the lost songs and singing them;

Re-establishing a relationship with the sun.
With rock. With cold mountain water.
With something wild.
This part you do alone.

Rough granite.
Frog jumping.
Splash splashing.

◆

Nothing against rainbows, but when I go, I want to get out. There. Man. I want the edges and beyond the edges. Deep space. Blackness and cold. Absolute zero, and supraluminal velocity. It's that all this human stuff has been radiating out there for a long time now, so you have to go a long ways to get past it: linguistic stuff, stories, songs maybe, further, then just chanting, or trip-play, wordy curlicues and pun-fun, further, just the drums there, and, further, the deep space beyond.

Beyond.

Maybe vaguely threatening, elementals: galaxies still in formation, stars birthing—where thoughts come from—a holographic untwining, particles forming—keep going—glimpse the Great Black Hole, from whence nothing returns.

Go for it.

Through the Hole and beyond. Forms becoming. Implicate unfolding.

◆

The second part is the vision part: the journey to the heart of delusion. The vision part is to recover what was lost:

lost laughter, lost feelings, lost love, forgotten prescience, forgotten luminosity—

looking for something
kind of like a cross
between a mammal
and a blue-white star

You have to create an opening for the new.
You renew your affair with the moon.
This part you do with others.

Feeling your lost song, and singing it.

This part is on the beach, a small fire—now mostly coals. We pull the blankets around us.

Through. Formless.

A nightbird calls, scolding, or maybe hurt.
Textures: damp sand, warm skin.
Dreams and dancing.
Realms of body, skeletal structure, bone and ligament.

All the eight bodily secretions. Sticky stuff and coarse stuff and dry stuff and slimy stuff. The Realm of Warm Bodies.

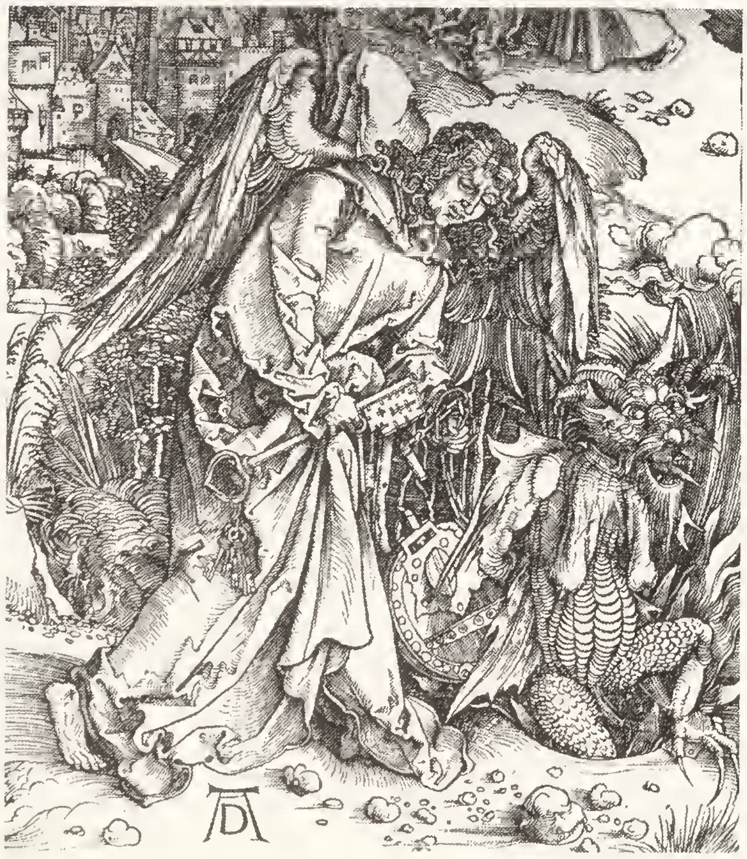
Further.

The Realm of Coarse and Dry Things.

Further.

It's ok to be scared, just keep going, discarding, letting go, lightening your load. Diving towards zero.

Here there be Dragouns.



DÜRER, 1498

The dragons that guard treasure.

They have a distinctive odor.
Be quick to it.

Space, silence, the talking stops. Bottomless Pit.

An angel passes.

Further, further. Driven. A kind of spiritual greed: a hunger for transcendence that borders on lust.

Your young men shall see visions.

Flipping, combining, mixing. Oliver Twist with his hand out asking for another dose.

What is it we are seeking?

It.

The It. That It. This It.

The it that's at. Where It is at. Wasn't that the point?

A power, a poison. Lucifer must have had it, to have grasped for the throne.

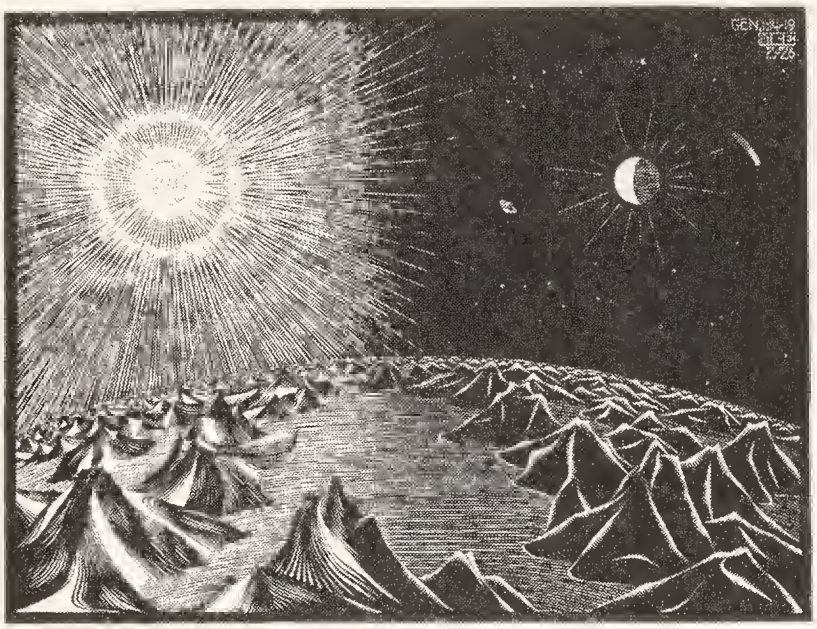
I don't want power. I want peace.

But when you are on the shore, why take the outboard off and carry it on your back?

◑

Down at the lake saw the real moon.
The one in the sky is reflection.
Li Po . . . grinning.

Geometry takes over, not the thing but the relationship, the pattern, that this is like that because this difference is like that difference. Pure pattern, and then the possibility of pattern. Speed increasing, boosters firing, escape velocity.



ESCHER, 1921

Further, freaking, losing it, point of no return just whooshed by, on the left, the seed orgasm beginning, taking hold, bye-bye, bye-bye,

My God! Who could have imagined?

I saw the distant peaks and barren ridges of a desert land. Above a nameless canyon, a raven cut out from the night shadow of death coiled in the wind. In the canyon below was a man, his shoulder hunched against a great, unmoving wall of stone, his tin cup filling with a faint seeping trickle of cool spring water. In such a wild, thirsty land he might have been any man, seeking to stay alive. He happened to be me.

—Steven Foster

Close call today. Didn't bring enough water. And the whole second half was scrambling uphill. Finally slowed, exhausted, to stop and go: walking three minutes, resting two. By LUCK, found a tiny snow patch on a north face. Scaled up the talus and dug out a pocket with my sheath knife; filled my bottle dropwise. I'd been without water several hours, and was pretty dehydrated: I could feel my feet and legs getting sloppy, missing footholds, and ready to turn an ankle.

Drank the snowmelt and started laughing. Got to camp with the sun still on the lake.

He laughed, touched the rope, and set the pulley to working.

—Antoine de St. Exupery

By five had bathed in the lake, washed my clothes, rested, drunk water, cup of hot chocolate. Lounged around with the ants on a pile of Jeffrey pine bark.

Water spirit feelin' springin' round my head,
Makes me feel glad that I'm not dead.

—Jim Pepper

There had been cicadas crackling in the heat as I made my way across the granite.

◆

The third part is yogic: ground state calibration,
centering, practice;
returning, coming home,
settling, silence, tranquillity—
mind like
flashing knives in a blur,
an arrow in flight,
or the croak of a frog:

exchanges of emptiness, presenting the Fact.

Embodying your song, being it.

This part you do with your teacher.

◆

It's not that we like deep space—it's more like a predilection, like a natal chart or something.

Or a disease.

Maybe some are born contrary, twisting widdershins against the flow—

a raven croaks—
then after
just the wind.

Go further.
Come to rest.
Go further.

◆

Tung-shan asked a monk, "Where have you come from?"
"From wandering in the mountains," the monk said.

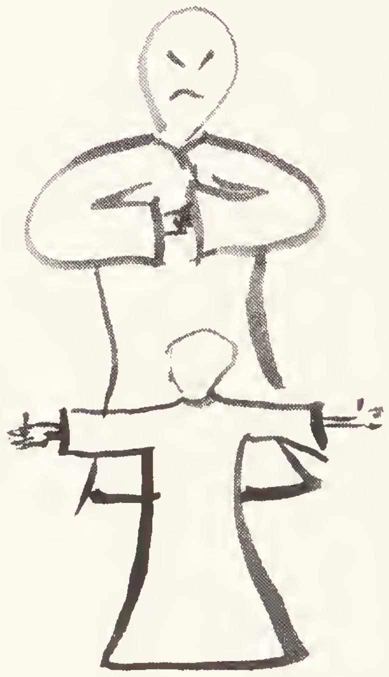
Yes. Yes. Yes.

"Did you go to the top of any mountain?"
asked the Master.

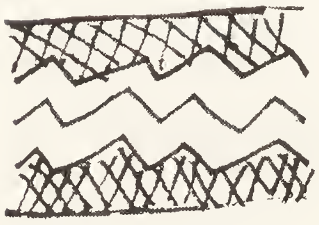
He's testing.

"Yes, I did," the monk replied.

Confidence.



TUNG-SHAN EXAMINES A MONK CLAIMING TO HAVE REACHED THE TOP OF A MOUNTAIN



The whole day was hard hiking. I wanted to find that pool near Lower Lake where I'd seen Grace swim once—her lithe body slipping through the water—kind of a pilgrimage—not because it was something special but because it was something ordinary.

It took about three hours but I found the pool, the falls at one end and bedrock visible twenty or thirty feet below the clear water. Swam. It was colder than Glacier Lake. A lot colder.

Near the creek,
looked like a place
a snake might be.
It was.

Old friends begin returning.

Textures of rock, weathering. Resinous incense. Heavy brush.

What we forget is that the engagement is total. You can't just do it with part of yourself. Your whole life is at issue here.

Your soul. To speak poetically.

Do you want freedom or not? Can you commit to your true ally? Do you want freedom or not?

◑

Come to rest.
Come to rest.

What's beyond that?

Dunno. Substituted tryptamines? The Path of the Rose?

Monday, man. Monday's what is beyond that.

Oh yeah. Forgot about that.

Glide. Chill.

◑

And around a bend, a reservoir of anger seething like magma, like a lake of molten rock. All the impotent rage and pain. Your very own delinquent children.

You have to love all of it.

Oh please, not more hippie stuff.

No. You can do it. You can do it.

◑

Space. Warm space. Inside space.
Under-the-blankets-space.

Mammalian spaces. We creatures with fur.

We creatures with metal.
(Put my hand there.)

Warm places. Sexy places.

* * *

Fourth day took off early. Pack a little lighter. Climbed the Butte and stayed on top about an hour. Identified the surrounding peaks while I ate—compass readings, old Forestry map. Headed west crosscountry. Mistake.

Again, all further, steeper, harder than it looked. Brushfields: scrub oak and snow brush, ceanothus, kinnikinnick, bitter cherry along the ridge. Only alternative the loose scree—the downhill tiring my legs quickly.

So much of it is just trailcraft.

The trail is older than the Path.

So much of it is just woodcraft.

Stopped short by a lone hemlock with a naked hoary trunk, all the foliage, blue needles, in horizontal sprays from the bottom, like it was water blown into waves by the wind.

Blue needles, fifty years of wind
frozen into crests.

◑

"Was there anyone at the top?" asked the Master.

"No, there wasn't," said the monk.

One leg made it, one didn't.

"In that case, you didn't reach the top," said the Master.

Aw, gimmeabreak.

Prickly phlox, a choir of butterflies, and Maitreya, sitting on Vulture Needle itself.

> *"If it were the case that I hadn't reached the top, how could I know there was no one there?" responded the monk.*

Indeed.

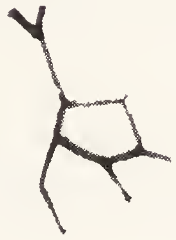
> *"Why didn't you stay a while?" asked the Master.*
>
> *"I wasn't opposed to staying, but there is one in India who wouldn't permit it."*

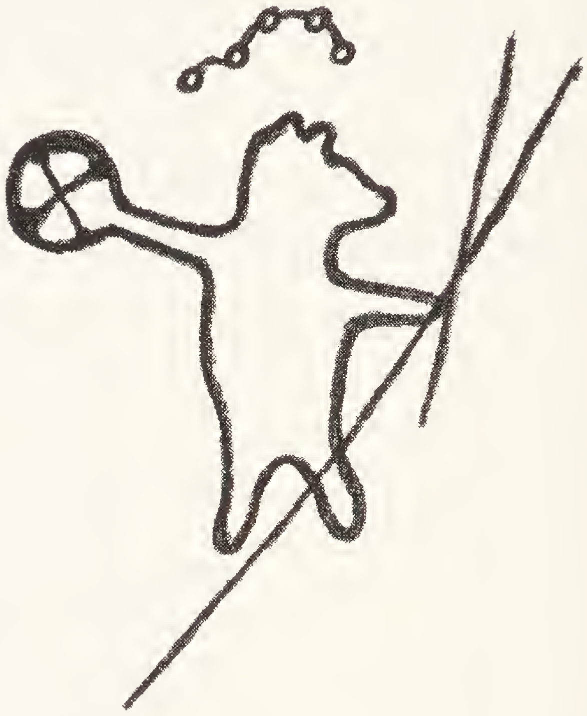
Still carrying his pack, but a good fit.

> *"I've been suspicious of this fellow from the first," the Master said.*
>
> *—The Record of Tung-shan*

Copse of fir. Spiraea in a shady grotto. Phlox on the rock, ten yards of gentians tucked into an overhang.

A place not densely wooded.





Didn't stop. Found the petroglyphs in mid-afternoon. Old ones, just barely distinguishable from the natural veins and weathering on the granite. It was all beginning to swirl.

Five circles, with lines connecting them. The lakes, perhaps.

Then saw the bear doctor. Bear's head and ears, standing up holding a drum in one raised hand. Several strong vertical lines, diagonal, a lance perhaps, in the other hand.

The power. That's the power entering.
She's called to her luck, her poisons,
she whistled for them and they've come.

Figured then there might be water near. Went looking for a spring. A few hundred feet up and over the knoll found the water-stones. Brilliant white, creamy, a faint green glow, the surface glistening, wet-like, in the hot dust. Just flakes and shards, they weren't working the edges—this is not tool-making stone.

Another hundred yards found a lake. Not a little pond or cirque, but a real lake, deep, blue, and wide. Very wide. And it's Labor Day weekend and there is no one here.

Songs begin returning.
Friends are here. Friends have come.

◑

The moon rose an hour before sunrise. Some chanting. Some singing. All of us still huddling and giggling—Julia talking about blowjobs, the Milky Way pulsing and glowing—frozen light through the eons of space.

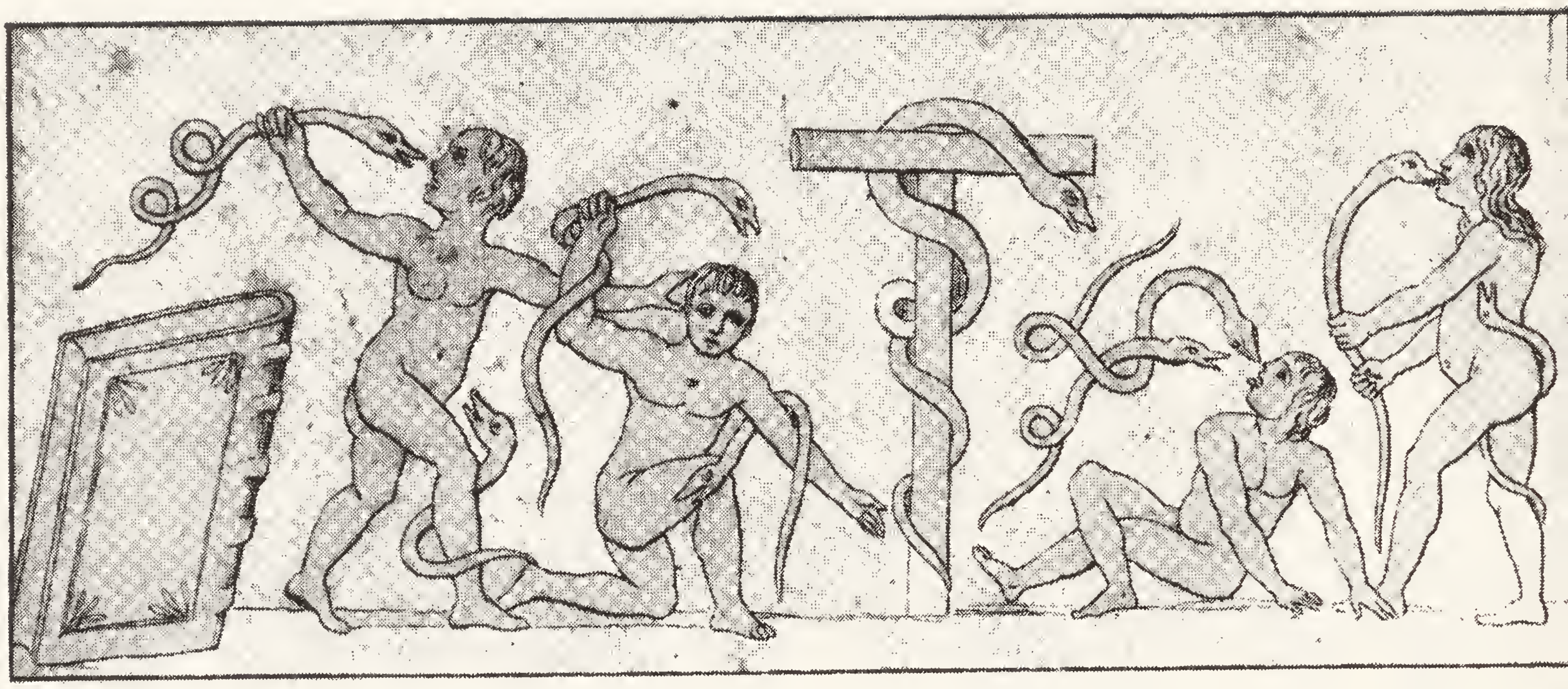
This is as good as it gets, she said.

Right. Four bodies huddling together, a tiny pile on a wide black beach. Somewhere near the edge of the world.

It is because it is so obvious that we don't see it.

It is because we are swimming in it that we miss it.

Yes, she said,
Oh, yes.



SERPENT AS BOTH PLAGUE AND SAVIOR—GNOSTIC DESIGN

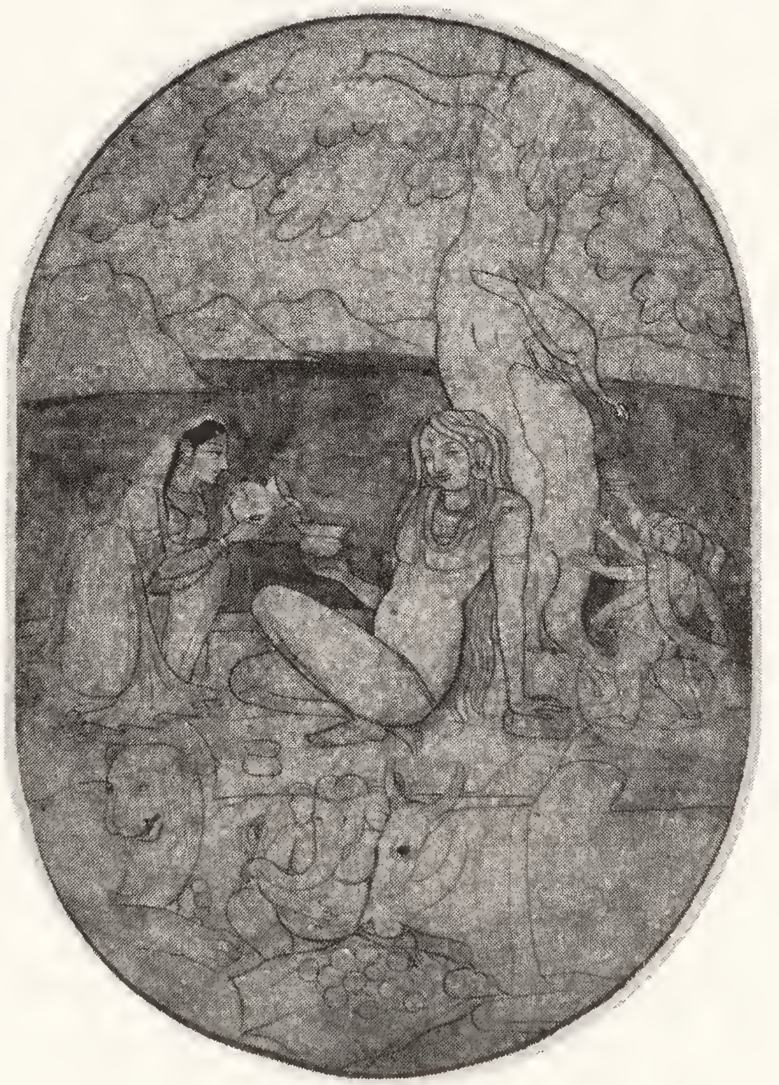
CLEANSING THE TEMPLE

Once the ink is ground, sitting patiently with the mantis, absorbing its movements and rhythms, feeling completely the mind of mantis—before reaching for the brush.

Our home square. Our particularly mammalian heritage. We just forget, until a wild eye reminds us. A voice, perhaps plaintive.

That there is enough pain in the world already. That I hear you, my brother. That I can feel that.

Empathy. Our natural condition. Our home square. It's that simple. We lay together, huddled, relaxed. The cats come over and join the pile.

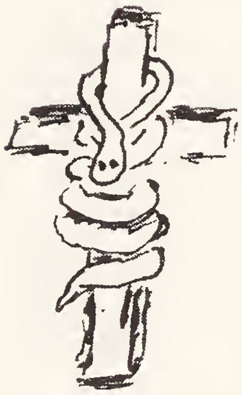


THE HOLY FAMILY

Later we wander out, arms linked, find the church, and go in.

Suddenly everyone is moving, dancing, the trance beat, like Jagannatha, rolling over and crushing everything in its path.

Goddess religion. Canaanite girls, the Shulamite maiden. Worshippers of Kali, Shiva, Dionysus, intermingled.



Bronze serpents twist up the pillars of the temple.

Nehushtan, נְחֻשְׁתָּן

the brazen serpent that Moses raised on a cross, from *nâchash,* נחַשׁ, "to hiss, to divine." Or the serpent of Eden.

Hanging out by the altar, Bibles and hymnals stacked beneath a pew. That the Wrath of God needs the Salvation of Love is, at this point, incontrovertible.

Moses comes down and finds everyone dancing. The Golden Calf is really Ganesh, remover of obstacles. Moses breaks the Logos—that written in stone—and stomps off, nursing his anger. The mics pick up the stomping, the DJ samples it and feeds it back, a heavy beat that turns and twists on itself like the serpents wrapped around the pillars. The stomping, yes.

Once again the offer of knowledge. Once again the challenge. To disobey, to reach for that which, the serpent assures us, is not poison. Once again the chance to be more than God's simple playthings. The priestesses are daughters of Eve, the one who dared. The one who shared. The Garden. Apples are everywhere. Eve, the patron (or perhaps matron) saint of the poison path.

Kali turning. Shiva spinning.

Moses descends from the mountain and finds everyone dancing. He breaks the Word, the stone-dead letters, and stomps off. The mics pick him up, the DJ samples it and feeds it back. The stomping, yes. His own dancing.

The Great Machine dance, the Ghost Dance that will end the world. That will bring back the buffalo. That will bring a final reckoning. That will bring in the New Age of Love.

To break the cycle. Of the dancing. Stomping. Dancing.

The Cleansing.

NUTMEG REVERIES, SASSAFRAS SPINS

Or raves. Or soliloquy.

The spice trade. Caravans and trails. Meetings with the upriver people, or chance encounters in the outback. Swapping tobacco, or pituri. Obsidian or steatite. Beads. Stories. Seeds. And psychoactive plants.

At this time we must expand our definition of "psychoactive," that is, what we mean by altering consciousness. Begin a general expansion, beyond the hallucination of objectivity. So that "gastroactive," to coin a term, is a subset of "psychoactive." The aroma people understand this well, as do certain moths.

We could go further, and talk about beads and precious stones. Aldous Huxley did. We could say that the cargo—of beads and spices, woad and hematite, wine jars in a sunken Phoenician ship and soft silks on camels, is the mystical light, that the cargo is wholly one of psychoactive agents.

So essential oils are a bridge, an ancient trade route crossing fuzzy boundaries.

Somewhere along it there is a nitrogen gate.

Common names	Nutmeg. Mace. As a spice, nutmeg refers specifically to the fruit kernel. The dried fruit covering (the aril) is called mace.
Taxonomy	*Myristica fragrans* is a tree native to the Spice Islands, the Moluccas. The family, the Myristicaceae, includes the *Virola* tree of Amazonia.
Part Used	The ground spice, either nutmeg or mace.
How Taken	Varies with imagination and circumstance. A usual dose is 1/2 oz. (two tablespoons) to one ounce (around four tablespoons). Some have taken two ounces, or more. Ingestion techniques range from simply washing the powder down with water to mixing it with a milkshake. One user reports that steeping the powder in hot water for an hour, and then straining it off and drinking the tea warm, before the fats and oils precipitate, eliminates the nausea sometimes accompanying ingestion. All of these techniques work some of the time.

Since the activity is in the oils, it seems likely (at least to me) that sublingual absorption might be effective. Betel chewers often add nutmeg to their chopped *Areca* nuts. Tests have shown that whole ground nutmeg or mace is significantly more active than the essential oil alone. This implies that the terpene fraction (mainly pinene) may contribute to the activity, perhaps through aiding absorption. Something analogous to this seems to occur with *Salvia divinorum*.

Class Empathogenica

Effects Hilarity, euphoria, or delirious visions. Some only get a headache. Best if fresh and freshly ground. The oils in old spices oxidize or polymerize into inactive and aesthetically undesirable substances. Many report heaviness of body, color and visual alteration, and audio effects. In Star Trek lingo, spatial-temporal anomalies are common. Short-term memory can reduce to near zero, which might account for some of the inebriant-like humor.

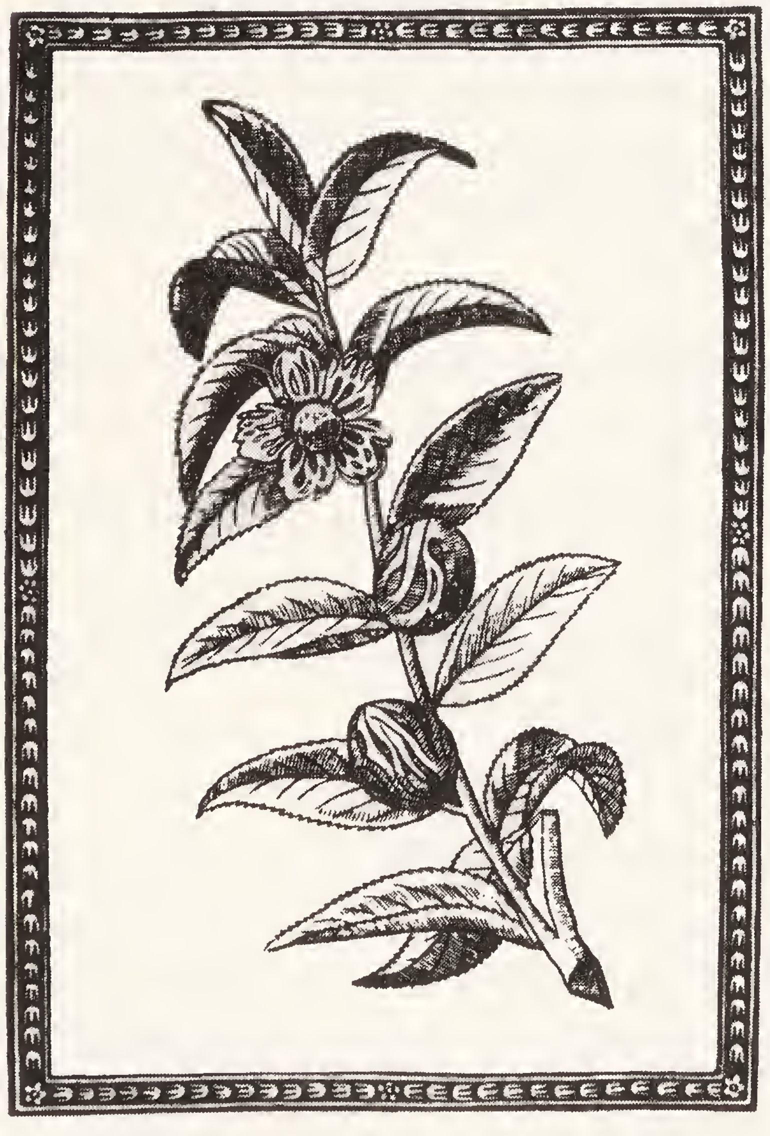
The full effects take several hours to come on and can last well into the next day. In the nodding stage, many report experiences similar to lucid dreaming, sometimes shared.

The Ally The drug-of-last-resort. Myself, I like nutmeg in eggnog.

Pharmacology Oil of nutmeg is around 80 percent terpenes and 12 percent aromatics. The aromatic fraction is composed of myristicin, elemicin, safrole, and trace amounts of eugenol and methyleugenol isomers. The ratio of the various oils varies considerably, East Indian nutmeg and mace being higher in safrole and myristicin, the elemicin content being highest in a West Indian sample (Shulgin et al 1967).

It has been hypothesized that these essential oils are aminized *in vivo* into their corresponding amphetamines, in this case MMDA, MDA, and TMA. Alexander Shulgin calls essential oils with three carbon chains the "essential amphetamines," as they only differ from their phenethylamine reflections by lacking an ammonia group.

Support for this hypothesis is based on a single study by Ulrich Brown at Bonn, who found MDA in chopped rabbit livers that had been dosed with safrole. Opposing this study is a recent German report by Benoni (see Ilex) who found no 4MA in the urine of human subjects ingesting guarana. Shulgin mentions a personal communication from Barfknecht, who claimed to find evidence of amphetamine in rats who had been fed allylbenzene, but I don't believe this finding was ever replicated.



NUTMEG, FROM MATTIOLI'S COMMENTARIES, 1579

OIL	PLANT + NH_3	PHENETHYLAMINE
Estragol	chervil (70-80%) tarragon (70-87%) basil (5-87%) fennel (2-7%)	4-MA(4-methoxyamphetamine)
Anethole	anise (80-90%) fennel (52-86%) star anise (75-90%)	4-MA(4-methoxyamphetamine)
Methyleugenol, methylisoeugenol	ginger, cinnamon (major component) snakeroot (36-45%) basil, bay (varies)	3,4-DMA(3,4-dimethoxyamphetamine)
Eugenol, isoeugenol	clove (70-90%) betel (28-90%) W. Indian bay (38-75%) cinnamon leaf (70-90%)	4-hydroxy-3-methoxyamphetamine
Safrole	sassafras (85-90%) cinnamon (70-90% in some spp.) nutmeg, mace(0.5-2%)	MDA
Myristicin	nutmeg, mace (2-10%) parsley (7-30%)	MMDA
Elemicin	nutmeg (1.5-5.5%)	TMA
Asarone	calamus (8-80%)	TMA-2
Apiole	parsley seed (20-80%)	DMMDA

Shulgin bio-assayed a mixture of one hundred milligrams of MDA, TMA, and MMDA in a ratio of 1:2:5, which he called the "pseudo-nutmeg cocktail." This mixture corresponds to the (un-aminized) oils present in five grams of nutmeg, and Shulgin reported "quite a sparkle and considerable eye dilation," more effect than is generally obtained with such a small amount of nutmeg.

While some of this proposed *in vivo* amination may indeed occur, I suspect that more of the psychoactivity is due to some as yet undiscovered mechanism, perhaps analogous to the recently discovered GABA-calcium channel stimulation of thujone. Shulgin (2000) also doubts the *in vivo* amination hypothesis. If such a reaction were really occurring, one would expect to find psychedelic effects from a wide range of oils and spices.

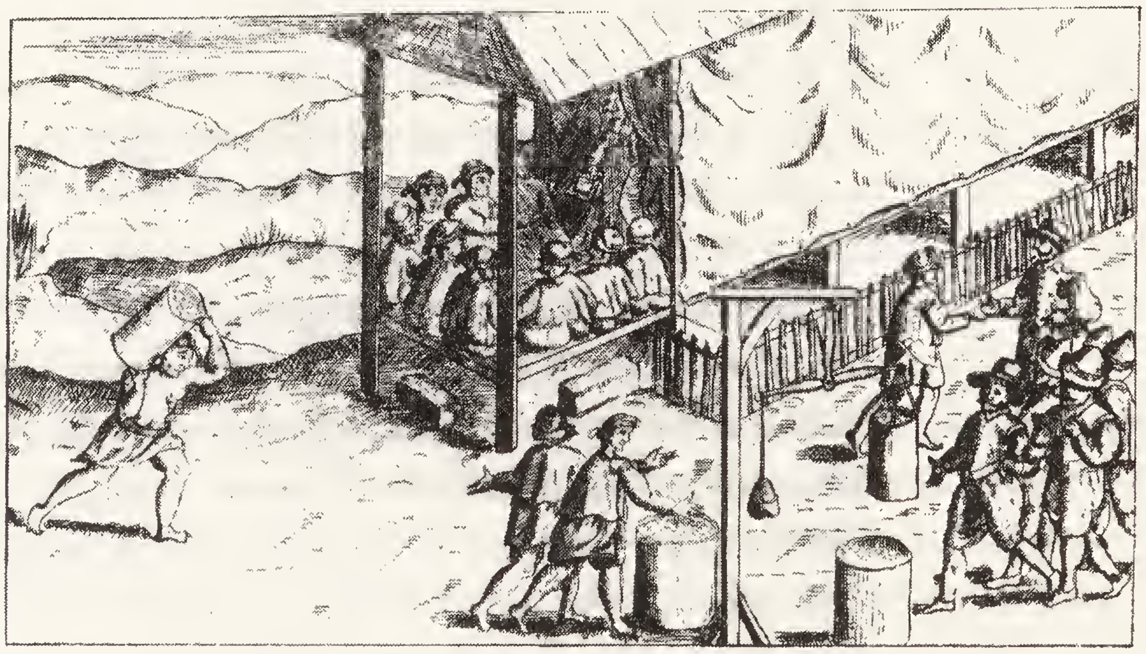
Truitt (1967) found that myristicin has MAOI activity.

Traditional categories for nutmeg include aphrodisiac, astringent, carminative, narcotic, and stimulant (Duke 1985).

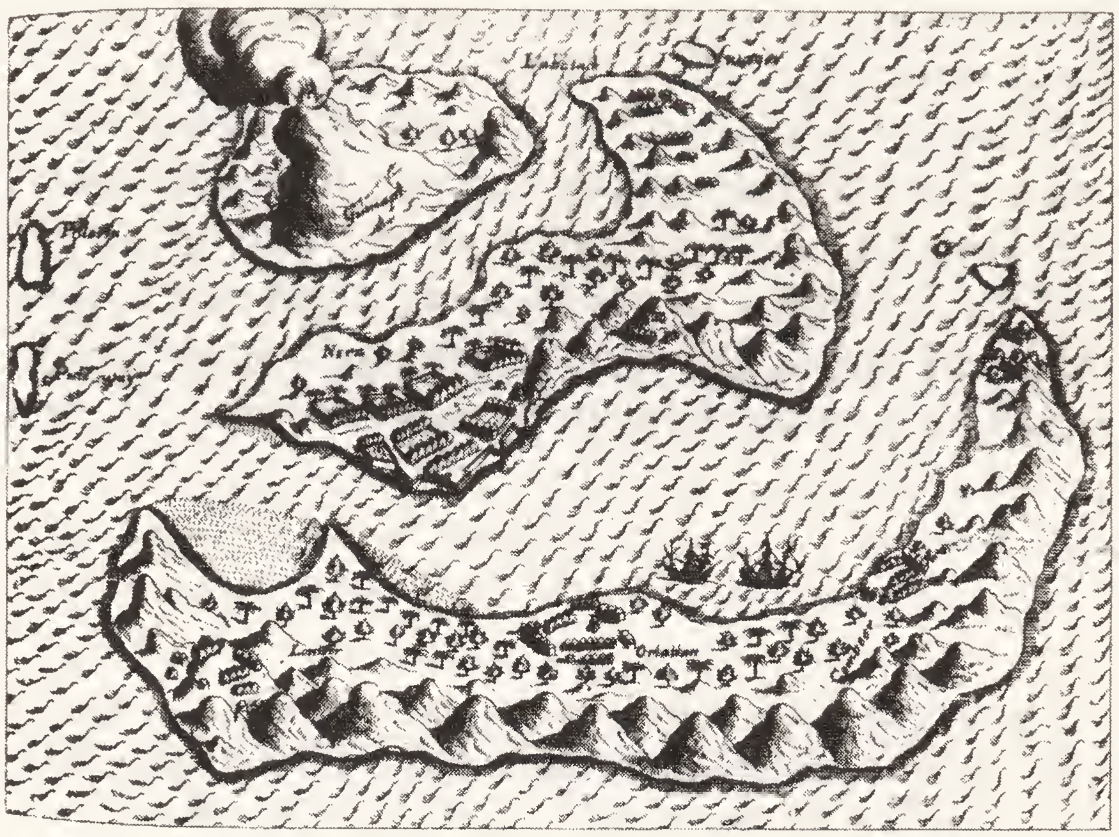
> *Bird introduced this nutmeg to the guys. It was a cheap and legal high. You can take it in milk or Coca-Cola. The grocer across the street came over to the club owner and said, "I know you do all this baking because I sell from 8 to 10 nutmegs a day." And the owner came back and looked at the bandstand and there was a whole pile of nutmeg boxes.*
>
> *—Reisner, Bird: The Legend of Charlie Parker*

In the sixteenth and seventeenth centuries, nutmeg became one of the most valuable items of commerce in the world. In addition to its superior qualities as a preservative for meat, nutmeg was recognized as an aphrodisiac, particularly for aiding male erectile function, as a cure for dysentery, "bloody flux," and, especially, the plague. Renewed interest in herbal medicine, and the difficulty in obtaining spices, raised the price of nutmeg until it was nearly worth its weight in silver.

Through the Middle Ages, the Venetians had a monopoly on the spice trade. They obtained their spices from Arab traders via Constantinople. Where the Arabs obtained them no one knew, except that they came from the East from dangerous lands inhabited by monsters and head-hunting cannibals. Of all the spices, nutmeg was one of the most difficult to procure, as even in the Spice Islands it grew only on an obscure archipelago called the Banda Islands. The Portuguese were the first to break the Venetian monopoly. They first landed in the Banda Islands in 1511, and by midcentury had captured and built forts in Malacca, Amboyna, and other important ports on the spice route by force of arms. They also captured the Muslim port of Goa on the west coast of India. They bought off the claims of King Charles of Spain to the East Indies for 350,000 gold ducats.



NUTMEG TRADERS IN THE BANDA ISLANDS, 1599

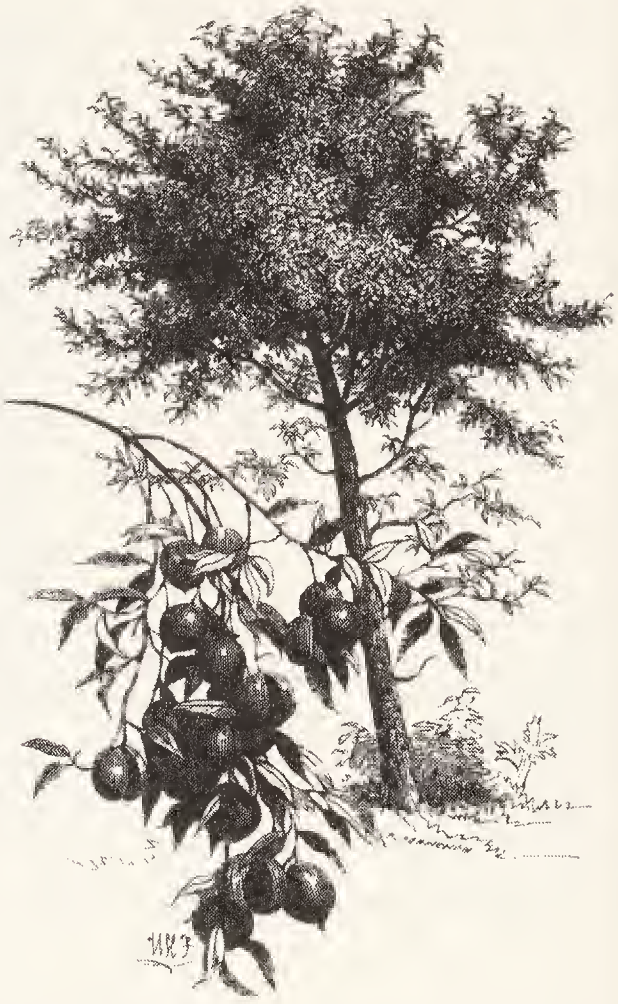


THE BANDA ISLANDS

But by the beginning of the seventeenth century, Dutch fleets, with the English on their heels, were overpowering the Portuguese in the East Indies. The natives were glad to get the Portuguese off of their backs, but they soon found that the Dutch were, if anything, even more unscrupulous. Cannons and terror mixed with treaty and diplomacy for another half-century. The story, admirably told by Giles Milton in *Nathaniel's Nutmeg,* is a tale of intrigue, hardship and death at sea, and murder and torture on land. The balance of power shifted many times between local chiefs, sultans, and kings, and the competing European forces. The Dutch and English took advantage of the many local wars between the various islanders, allying themselves with one side and then another, always trying to improve their own positions.

The tiny Banda Islands, where nutmeg grew, are the most southerly of the Spice Islands and the most treacherous for navigation. By 1603, the Dutch had forts under construction on the main islands. The only island not under their control was the tiny island of Run, less than two miles in length and ten miles from the other islands, which are closely clustered. A group of English mariners and traders were shipwrecked on Run in 1603, and managed to establish cordial relations with the extremely fierce and warlike inhabitants. This was the basis of the English claim to Run, the richest of all the Bandas in nutmeg.

The English were not able to return to Run until 1616, when a resourceful captain of the East India Company named Nathaniel Courthope landed on Run with a small group of men. In the intervening years the Dutch had launched several attacks and invasions of the larger Banda Islands, sometimes with the help of Japanese mercenary pirates. Some of these assaults were successful, ending in bloody massacres of the native inhabitants, in other assaults it was the fierce Ban-



NUTMEG TREE

daese who triumphed. Everywhere the Dutch had made themselves hated by the inhabitants, and the Bandaese were quick to welcome and form an alliance with the English.

But Courthope and his native allies on Run, the tiniest of the Bandas, were vastly outnumbered by the Dutch forces that attacked him as soon as they learned of his presence on the island. Courthope held out for four years without supplies or reinforcements, again and again refusing Dutch demands for surrender, even when it became clear that no relief was on its way. In 1620, his men sick and hungry, out of money and nearly out of ammunition, Courthope learned that the islanders on Great Banda were poised for a general revolt. Courthope planned to row to Great Banda under cover of darkness to offer aid and leadership to the uprising. A spy relayed his plans to the Dutch. Two Dutch boats trapped him in the narrow straits between the islands and shot him. The Dutch secured their control of the Bandas by massacring most of the rest of the Bandaese, cutting down all the nutmeg trees on Run, and imprisoning Courthope's surviving companions. In 1623 the Dutch imprisoned all of the English on Amboyne and tortured them for days by pouring water down their throats until their bodies were swollen and bulging. They finished them off with further torture by fire and then by drawing and quartering.

Having lost the Spice Islands, The British East India Company concentrated its efforts in India, but the loss of Run and the Amboyne Massacre remained a bitter issue for another thirty-five years. In 1664 a few English ground forces overpowered the Dutch in New Amsterdam. In the peace talks that followed, the English finally gave up their claims to Run, reluctantly agreeing to accept Manhattan Island as compensation.

> *Mental reverie, floating sensations. Sounds were like underwater echoes. With my eyes closed, lots of jaguar images with jagged edges and other atavistic animals. I took 9½ TBSP. For the first three hours it was tactile. Lots of hilarity. Then it became opium-like—legs numb and heavy. It was hard to walk. It lasted twelve hours, with a day and a half of hangover.*

We have elsewhere characterized the war on drugs as a religious war, but we can also see that it has an economic side, that it is a resonant descendant and continuation of the Spice Wars. The alcohol industry has supported, if not instigated, repressive measures taken against rave clubs and gatherings in England, correctly recognizing MDMA culture as a threat to their hegemony. Tobacco has been quick to support anti-marijuana sentiment. The Armed Forces of the United States are actively suppressing the competitive threat of coca, both at home and abroad. The great Spice War continues.

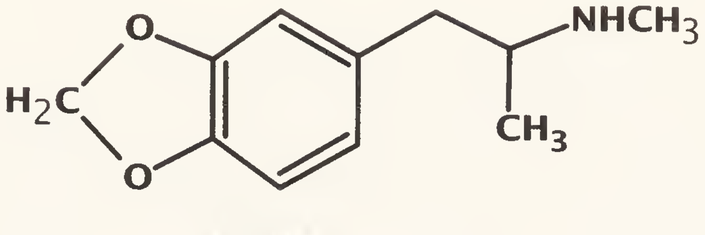
> *Shorty was an erudite cat burglar from New Orleans. He couldn't have been more than five feet two. Shorty would come and hang out on my bunk and tell great stories of the life of crime. He remembered movies he liked too, and once recited scene by scene the Burton and Taylor film* Who's Afraid of Virginia Wolfe. *He liked the other Burton too, Richard Francis Burton, the explorer. He'd read many of his books and could tell a lot of the stories. On the outside his day trade was welding and he worked in the shipyards. That confused me. I asked him why if he was a burglar he had a regular job.*
>
> *"You got to have a job to be a criminal, man," he said.*
>
> *"But then what's the point?"*
>
> *Shorty just shook his head.*
>
> *"You're a real nice guy," he said, "but let me give you some advice: you're not right for crime. It just wouldn't work for you. Trust me on this, okay?"*
>
> *Shorty worked in the kitchen as a dishwasher. One day he downed a can of mace. I was reading on my bunk. He had a big grin and he sat down. Science has no explanation for the "contact high," but I got it. Everything seemed absurdly funny. We'd already been laughing for twenty minutes when it was time for the ward meeting. One of the docs was there, a deputy warden, the social workers, and the rest of the inmates. We sat apart from each other, but it didn't help. One or the other of us would start giggling and then we'd both be laughing. No one else was amused. Sometimes we'd be able to control it for a few minutes, then I'd catch Shorty rolling his eyes at the ceiling and we'd both be gone again. The warden started mumbling something about release dates, and that pushed us both back over the edge and we just let it all go. The cosmic absurdity was about to give us each another six months and both of us were laughing so hard there were tears on our faces and we were falling out of our chairs. What did any of this puny farce mean compared to the great absurdity of the universe? Somehow we both knew that the laughter was on our side, that they couldn't really hurt us because what we were laughing was the Truth. Then the other guys started giving us the evil eyes and we were finally able to fake some normality.*
>
> *"Sorry," I said, "private joke."*
>
> *Wherever you are, Shorty, this one's for you.*

XTC
FLIPPING AND RAVING

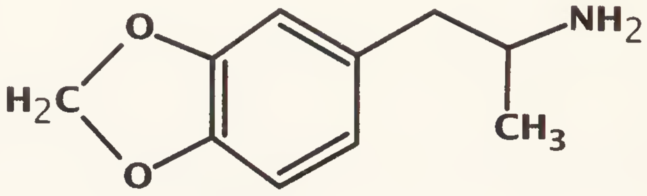
Chemistry	3,4-Methylenedioxy-N-methylamphetamine (MDMA).
Related Substances	3,4-Methylenedioxamphetamine (MDA). 3,4-Methylenedioxy-N-ethylamphetamine (MDEA). MDMA is known as Ecstasy, E, X, or Adam. MDEA is called Eve. MDA was dubbed "the love drug."
How Taken	As crystals, from reputable chemists. On the black market as tablets of widely varying potency. Analyses, and pictures, of dozens of pills and tablets from the United Kingdom are in Saunders (1995, 1997). Many tablets contained MDEA rather than MDMA, or a mixture of the two compounds. Of the pills containing MDMA, the quantity varies from 2 mg. to 160 mg., with most falling between 70 and 110 mg. Several "brands" contain no MDMA or MDEA, substituting amphetamine, caffeine, or ephedrine, sometimes mixed with ketamine. One wishes that some traditionally benevolent agency, such as Weights and Measures, would insist on truth-in-advertising. Since the DEA has made that impossible, a nonprofit organization, DanceSafe, using grants from Promind and the Multidisciplinary Association for Psychedelic Studies (MAPS), has sponsored analyses of pills being sold as MDMA in the United States. Results (DanceSafe 2001) show that while the majority of the pills are indeed MDMA, others are MDA, dextromethorphan hydrobromide (DXM), caffeine, or ephedrine. One pill contained phencyclidine (PCP). A number of pills contained nothing at all. DXM, a common ingredient in cough syrup, increases body temperature and is thus dangerous in a dance environment, as hyperthermia is the most frequent cause of medical emergencies at raves. In 2000, pills containing 4-methoxyamphetamine (PMA) began circulating on the West Coast. PMA has adrenergic pressor effects and has been associated with several deaths. DanceSafe sells testing kits, using the Marquis reagent, that can reliably differentiate pills containing caffeine, DXM, PCP, or amphetamine from those containing MDMA. Other tests can distinguish MDMA from MDA.
Effects	The great opener of the heart chakra. Heart speech, heart words, spoken and listened to and heard and felt. Release of compassion. Touching. A mammalian thing, lying together in a pile like sea lions on a rock.
How Taken	In small groups. As a couple. Alone, questing. With a friend. At a community gathering. At a rave.

Pharmacology / Toxicology

Much is known about the neuropharmacology of MDMA, but none of it fully explains its unique effects. MDMA blocks the reuptake of serotonin (5-HT) in the synaptic cleft, as do SSRI (serotonin specific reuptake inhibtors) antidepressants such as fluoxetine (Prozac) and sertraline (Zoloft). The 5-HT acts on both pre- and postsynaptic binding sites. Further, MDMA binds directly to 5-HT receptors, and is also an agonist for muscarinic M1, alpha-2 adrenergic, and histamine H1 receptors. MDMA also releases dopamine.



MDMA



MDA

The metabolic halflife of MDMA in the body is six hours. That means that after 24 hours 15/16 of the MDMA has been eliminated. After 48 hours only 1/256 of the MDMA is still in the body. Seventy percent of the MDMA is excreted unmetabolized in the urine.

Brings to mind certain reports from Siberia. . . .

In addition to blocking the reuptake of 5-HT, MDMA or one of its metabolites apparently enters the neuron and causes release of 5-HT from cytoplasmic stores. Thus, not only does serotonin flood into the synapse through the 5-HT transporter, but because the reuptake channel is blocked it stays there and concentrates. Again, however, this does not explain MDMA's activity, as other drugs which flood serotonin into the synapse do not produce MDMA-like effects. Further, MDMA is not cross-tolerant with MDA, its near molecular cousin, nor with other psychedelics. Truly, it's in its own class.

◆

Dozens of studies have been made investigating possible neurotoxic effects of MDMA. Most of these studies have been on rats and mice, though at least one involved squirrel monkeys. Indirect evidence suggests serotonergic axonal damage at high doses, and prolonged decreases in serotonin levels at even moderate doses. Extrapolating these findings to humans is imprecise at best.

But still.

Even without the animal studies, to the sensitive bio-assayist, MDMA packs a heavy body-load, and feeling "wiped-out" for a day or two after ingestion is not uncommon.

> *I was in the midst of a very complex systems design. It was a real-time event-driven machine with numerous interacting modules. There were finite state automata, arrows, rings, and queues all over my white board. We took the Adam on Saturday. It was one of the more memorable, satisfying, and life-changing nights of my life. I felt great on Monday, but I couldn't get into the diagrams deeply enough to pick up the thread I'd left off on Friday. Instead I went around visiting with the other engineers in their offices, talking, re-connecting and team-building. I can't remember what I did on Tuesday, but Wednesday I finished the design.*

Several studies have reported evidence of short-term memory impairment in MDMA users. None of these studies has used large samplings, and they are open to criticism in a number of ways. None of the differences between the "controls" and the test subjects were much above the noise level, and in some of the tests acute effects of MDMA could still have been significant.

> *But still.*

Until more data are available, the wise adept will never go over 100 mg. per 100 lbs. body weight, and that only very occasionally. Half-doses are surprisingly effective, especially if followed up with some psychedelic.

At raves, aside from a few idiosyncratic reactions, most of the damage has come from overheating (hyperthermia) or dehydration. Drink water, juice, or ion-balanced drinks. Don't overdo it, though. One young woman died from drinking too much water, when her body became desalinized (hyponatremia).

A few more cautions and tales: MDMA can result in a rapid rise of blood pressure during the first hour, and occasionally tachycardia. Persons with heart or arterial problems should use caution, or pre-dose with a beta-blocker. A beta-blocker, such as propanolol, would also reduce the jaw-clenching and sympathomimetic effects that often result from MDMA.

In animal studies, fluoxetine (Prozac) effectively blocks the neuronal damage associated with large doses of MDMA. Dropping a Prozac an hour or two after taking MDMA might be a wise precaution.

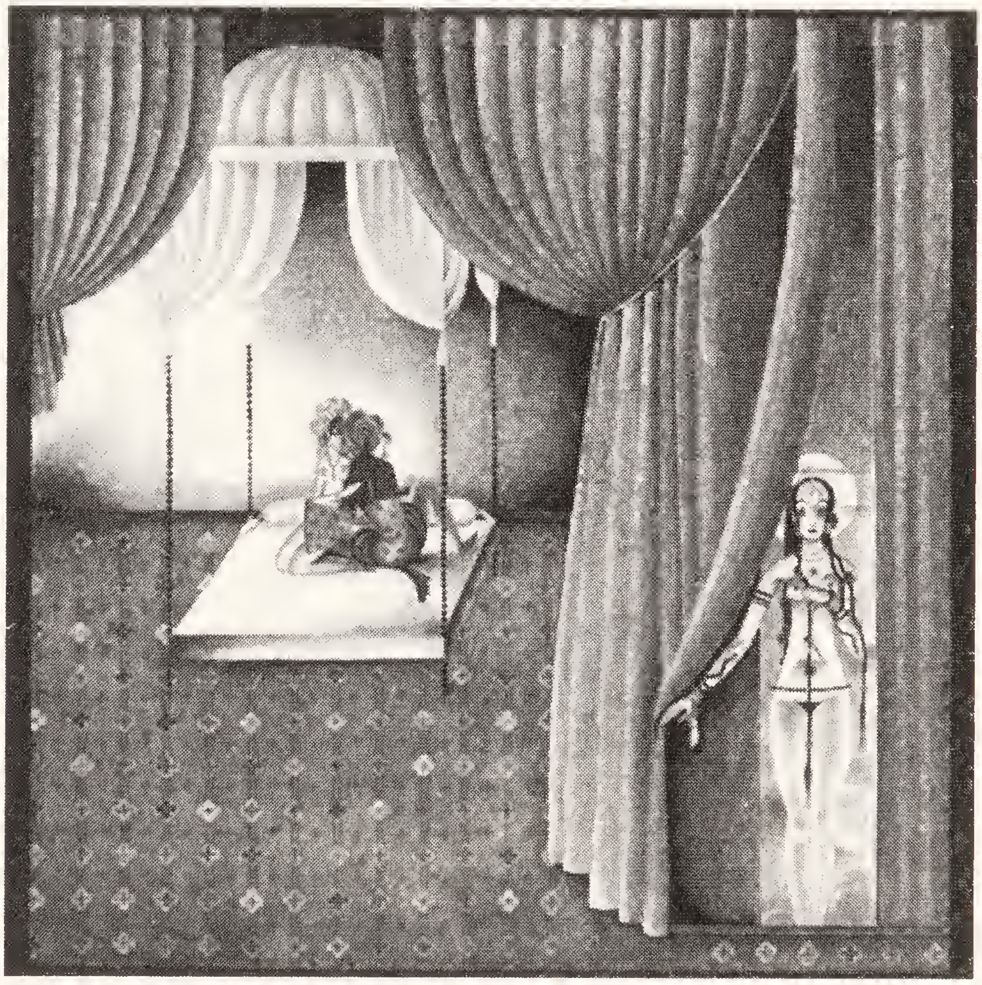
Some people taking Prozac report decreased effects from MDMA. A few people have used an MAOI such as harmine to lengthen the effects of MDMA, but this seems very ill-advised to me. If you don't

MASTER OF POISONS, BUNDI, C.1790 (DETAIL) know what an MAOI is, you're in over your head here and need to do some homework.

Signatures Being out among the general public on ecstasy carries the risk, in Ann Shulgin's words, of picking up "hitchhikers." You might be sitting on a bench in the park. Somehow your vibrations extend out for fifty yards, and strangers will come and sit beside you and start telling you their life stories.

> *Always disconnect your telephone. If your mother calls, you'll never get off the phone.*
>
> *—Ann Shulgin*

Effects Sex on X is good, but women need to know that the sympathomimetic properties of X can inhibit male erection, so take it as it comes. No need to try to force anything.



YOUNG MAN LOVED BY TWO SISTERS,
KAY NIELSEN, 1918

The Ally

> *We were introduced to it by a friend of ours named Marsha. We all fasted, then drank some bicarbonate of soda, then the Adam. We had already been getting close, but the Adam let us talk frankly about our feelings for each other. We lay around a lot on the blankets, holding each other and giving three-way foot massages. It was so good we took the booster. The next week we became lovers. We invented the word "truple," and started looking for things that came in threes.*

The Ally A woman I know had been trying to quit smoking for several years. She would throw away all of the cigarettes, last two days, and then buy another carton. On Adam the craving became transparent, and unnecessary. Other than an occasional social cigarette, she never smoked again.

Signatures "We had sex on the first date, X on the second. Then we got married."

CORRESPONDENCES

ACTIVITY: Purification
ANIMAL: Sea Lion
ARCHETYPE: Temple Priestess
ART FORM: Dancing
BODILY FUNCTION: Irritability
BODY PART: Feet
BUDDHA REALM: Kwan Yin
CHORD: Major Third
COLOR: Opalescent Silver
COSMIC ENTITY: Pulsar
CRUTCH FOR: Self-Absorption
DIMENSION: Corporeal
DISCIPLINE: Alchemy
ELEMENT: Fire
FORM OF ENERGY: Fusion
FORM OF IGNORANCE: Alienation
GEMSTONE: Pearl
GEOMETRY: Tensor
GOD: Krishna

History MDMA was synthesized and patented by Merck Pharmaceuticals in 1912, but the company never discovered the drug's unique effects and it was not marketed. The US Army investigated MDMA in 1953 in their search for a truth serum for use in interrogation. MDMA was code-named Experimental Agent 1475.

Alexander Shulgin synthesized MDMA in 1965, as part of his extensive investigation of structure-activity relationships of phenethylamines, and has been called the "father of MDMA." Actually, according to Daniel Perrine (1996), Shulgin first learned of MDMA's profound psychological effects from a young chemistry graduate student named Merrie Kleinman, who had synthesized some herself and tried it with some friends. Shulgin began his own experiments and published the first scholarly article on MDMA in 1976, with David Nichols. Rumor has it that it was Shulgin who first introduced MDMA to Leo Zeff, who in turn almost single-handedly created a therapeutic protocol and turned on and trained thousands of other therapists, as well as artists, writers, and businessmen.

For the next eight years MDMA was mainly used by therapists, their friends, and those with connections to their friends. Most of these people were old enough to remember the sixties and kept their mouths shut. During this period MDMA was called Adam. Couples work was common, or small circles. Ralph Metzner coined the word "empathogen."

The Ally

> *We'd taken E to do a parting ritual, a ceremony to mark the end of our relationship. She brought in a basin of warm water and a bowl of salt. She washed my feet, rubbed them with oil and salt, and dried them with her hair.*
>
> *On the beach we built a little fire and she cut off a lock of her hair and tossed it into the coals. I did the same.*

History

By the mid 1980s, MDMA was being used more and more by students and others of the younger set, especially in California and Texas, and it was being called *ecstasy*. In 1984 the DEA published a notice in the Federal Register that it intended to place MDMA in Schedule I of the Controlled Substance Act. Much to their surprise, the scientific and therapeutic community mounted a challenge. Thomas Roberts, George Greer, Lester Grinspoon, and James Bakalar retained an attorney and sent a letter to the DEA requesting a hearing.

The first hearing was held at Esalen in Big Sur. A number of researchers and psychiatrists, including Stanislav Grof, Claudio Naranjo, Richard Yensen, and Philip Wolfson, presented evidence of the positive benefits of using MDMA in a wide variety of therapeutic contexts, from treating psychosis to child abuse to post-traumatic stress syndrome.

In April of 1985, *Newsweek* published a sensationalist article on ecstasy, calling it "the drug that LSD was supposed to be," and more media exposure followed. Gary Trudeau produced a series of *Doonesbury* cartoons about MDMA and other "designer drugs." A laboratory in Texas began producing large quantities of MDMA, as much as a kilogram a day, and selling the tablets in bottles labeled "Sassyfras." This was the last straw for the DEA, and they used their recently acquired emergency powers to place MDMA on Schedule I for a period of one year. Their rationale was a study that had found that large doses of MDA (not MDMA) caused brain damage in rats, even though they admitted that MDA and MDMA were not cross-tolerant.

Two more hearings followed. The preponderance of the evidence, by such researchers as the Shulgins, David Nichols, Thomas and June Riedlinger, and many others, overwhelmingly stressed the positive potential for the use of MDMA, and the virtual absence of reported problems or emergency room visits. The principal witness for the DEA was Ron Siegel, best known for proving that monkeys injected with enough cocaine will start chewing their hands off. In response to the therapeutic claims being made for MDMA, Siegel stated that "we've all heard this before, for LSD," and that "we don't want another PCP on the streets." The DEA's Administrative Law Judge Francis Young, in a ninety-page decision, found in favor of the litigants, citing that the DEA had not established that MDMA had a high potential for abuse and that MDMA did indeed have "currently accepted medical use." He recommended that MDMA be placed in Schedule III. The DEA had no intention of following the judge's decision, and placed MDMA permanently in Schedule I anyway.

Signatures I think more marriages may have been broken by MDMA than saved. Adam makes it ok to say "I'm not happy." To feel it and to know how and why it is true.

The Ally

If you are not in paradise, the E will show you.
If you are in paradise, you already know.

CORRESPONDENCES

GODDESS: Brigit
GRAMMAR: Limbic
HISTORICAL AGE: Golden Age
IMAGE: Village
LANDSCAPE: Ocean
LOGICAL OPERATOR: And
MACHINE: Balloon
METAL: Gold
METAPHOR: Truth
MINERAL: Peridotite
MUSICAL INSTRUMENT: Synthesizer
MYTH: Sun Sister
MYTHIC HERO: Attis
NUMBER: Natural
OCCUPATION: Priest
OUT-OF-BODY REALM: Realm of Sensual Pleasures
PERIODIC TABLE COL.: Alkali Earths
PHASE OF COITUS: Pre-Orgasmic

SENSUAL PLEASURES, MAILLOL, 1926

The Ally A medicine for alienation. Which may account for its popularity.

Poesis Not trivial. Make friends with a chemist.

The Ally

> *We took it with another couple—five of us altogether. I had a crush on all three of these women, and I'm thinking, "How far can this go? I'm already having sex with two of them." The Adam was coming on and there was this awkward silence so I just said "I'm in love with every woman in this room." The women just laughed and said that was OK and crawled all over me. I was in heaven.*
>
> *Later in the day I was lying on my back in the bedroom listening to music and Sharon came in and crawled on top of me.*
>
> *"I've had a crush on you for a long time. You probably didn't know that."*

Effects Telepathy. But an emotional telepathy, different from the noetic telepathy of the hallucinogens. Rupert Sheldrake (1995) performed an experiment where four subjects, with their backs to the room, were stared at by the rest of the group. At the end of twenty seconds each subject wrote down whether or not he felt he was being stared at. Most subjects scored no better than chance. One subject, however, was nearly always right. He revealed later that he had taken MDMA.

The Ally

> *My daughter was supposed to clean out the litter box, her job, but she hadn't been doing it. I took her hand and walked her over to the box. I took the big wooden fork and started showing her. "Treasures in here somewhere. Oh, there's a good one." I watched the horror in her face as I put it to my nose and smelled it. It was as if I could smell the way dogs smell, nothing really bad, just rich strong odors—fish, chicken, all the cat food of the past several days.*
>
> *The daughter ran off screaming.*

History In the winter of 1986-87, ecstasy arrived on the island of Ibiza. About the same time, the Rajneesh commune in Oregon closed, and ecstasy began spreading around Europe along with the red-clothed emigrants. A group of young British DJs, who had discovered the new religion of E + music on Ibiza, decided to recreate the scene after they got home.

> *The resulting reaction triggered off the most vibrant and diverse youth movement Britain had ever seen. Ecstasy culture—the combination of dance music (in all its many and various forms) and drugs—was the driving phenomenon in British youth culture for almost a decade. It sent out shock waves that continue to reverberate culturally and politically, affecting music, fashion, the law, government policy and countless other areas of public and private life.*
>
> —*Matthew Collin, Altered State*

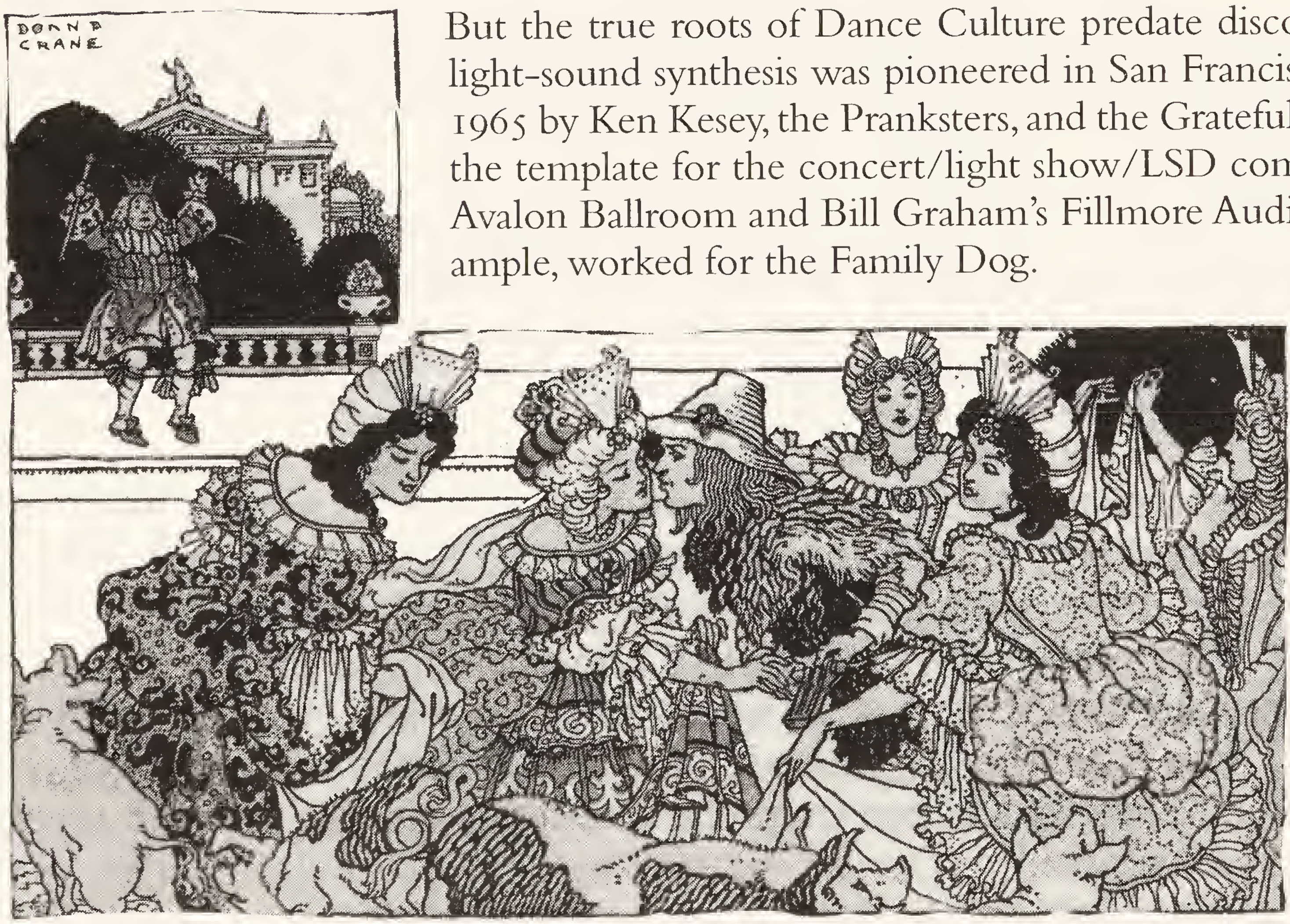
Collin (1997) traces several lines of musical and cultural transmission that fed into Acid House. While any such reconstruction is oversimplified and incomplete, it is nonetheless an interesting story. Collin begins with the Stonewall Riots of 1969 in New York, and the new energy in the black gay disco clubs that followed. Many of the DJs who later became important innovators frequented the Loft, where David Mancuso hosted Saturday night parties beginning in 1970. The drug of choice was a speed-quaalude combo. One of the Loft graduates was Larry Levan, who went on to create total environment sound at the Paradise Garage.

> *The almost devotional intensity of the atmosphere in the black gay clubs of New York created an ideological template that has been employed, knowingly or not, in dance cultures ever since.*
>
> *—Matthew Collin*

Another Loft graduate was Frankie Knuckles, who later moved to Chicago and, by making use of electronic sound and drum boxes, took part in the early development of Chicago House, while Techno was emerging in Detroit. These threads, New York Garage, Chicago House, and Detroit Techno, transmuted and evolved, met ecstasy from California in Ibiza and emerged at the Shoom in London in 1987. Other contributions to the rapidly evolving music came from Kraftwerk, with roots in the European electronic avant-garde classical tradition.

> *Scratching. Sampling. How can you call that art? It'd be like someone writing a book using other peoples words and ideas, just taking a bunch of quotes and bits and mixing them up together with italics everywhere . . .*

But the true roots of Dance Culture predate disco. The total environment light-sound synthesis was pioneered in San Francisco with the Acid Test in 1965 by Ken Kesey, the Pranksters, and the Grateful Dead. The Acid Test was the template for the concert/light show/LSD combos at the Family Dog's Avalon Ballroom and Bill Graham's Fillmore Auditorium. Goa Gil, for example, worked for the Family Dog.



GROUP KISS, D. CRANE, C.1920

As the rave scene was gaining momentum in England in the late eighties and early nineties, the British government moved to suppress it. Rave organizers responded by keeping the location of the rave secret until just before the event and then announcing the location on a pirate radio station, or at a particular telephone number. By the time the police arrived at the rave, it was already too big to be dispersed.

> *Free gatherings are political acts, outside the mainstream of controlled commerce. Just getting together, dancing, making art, is a confirmation of the archaic human cooperative spirit.*

In the countryside, the "house" scene met the festival travelers. The travelers, like the Rainbow Tribe in America, were psychedelic. They knew how to put on large outdoor gatherings. And when they tried ecstasy, they liked it. The union of the urban house scene with the rural, nomadic festival scene created a bona fide counterculture—out of the foam of hedonism, political consciousness emerged. Lucretius would have smiled, and nodded.

Government response took the form of raids, arrests, and a series of increasingly harsh and arbitrary laws. They particularly targeted the Spiral Tribe, who, like the Pranksters in America a generation before, were intent on twenty-four hour transformation. Spiral Tribe lived in buses, carried their sound system with them, and blared techno at dance gatherings every weekend. Others followed their lead. After a large festival at Castlemorton in 1992, police moved in with roadblocks and helicopters and managed to arrest most of the members of Spiral Tribe. The Tribe responded by organizing. Protests against the sweeping new laws, some of which specifically outlawed "acid house" and "techno" music, drew crowds as large as 100,000. Police mounted horseback charges against the protesters and arrested hundreds, but the protests continued. At their lengthy and very expensive trial two years later, all members of the Tribe were acquitted.

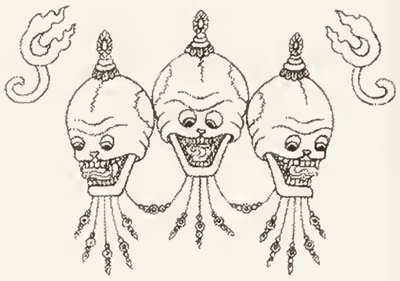
> *Ecstasy clubs in Northern Ireland were the first venue where Protestant and Catholic youths danced together. When footballers in England began taking ecstasy, violence plummeted. Everywhere it has gone ecstasy has been a catalyst for peace.*

To many old-timers, the association of ecstasy with dancing has always been mystifying. No one had ever danced on Adam.

> *I'd rather be lying in a mush pile.*

The focus on dancing, itself, is evidence of the presence of psychedelics and stimulants in Dance Culture. LSD had never disappeared in the United States, as it had to a large degree in England. In England, ecstasy filled a void and created a new subculture, complete with a Summer of Love. When the rave scene emigrated back to the United States in the early nineties, ecstasy always shared the floor with acid and mushrooms.

Matters of State and Liberty



By outlawing MDMA, the DEA not only curtailed therapeutic research, it created a new generation of disaffected youth, a generation who otherwise had no reason not to extend the ecstatic and peace-loving energy of their new religion to encompass and benefit the larger culture. What is emerging is a cross-generational solidarity with those elements of the sixties counterculture who never renounced their own communal dancing and are now breathing a great sigh of triumphal relief.

The clear message from the Drug Warriors is that they are not interested in peace, citizenship, or even tolerance.

No. They want to incarcerate all of us, and make money doing it.

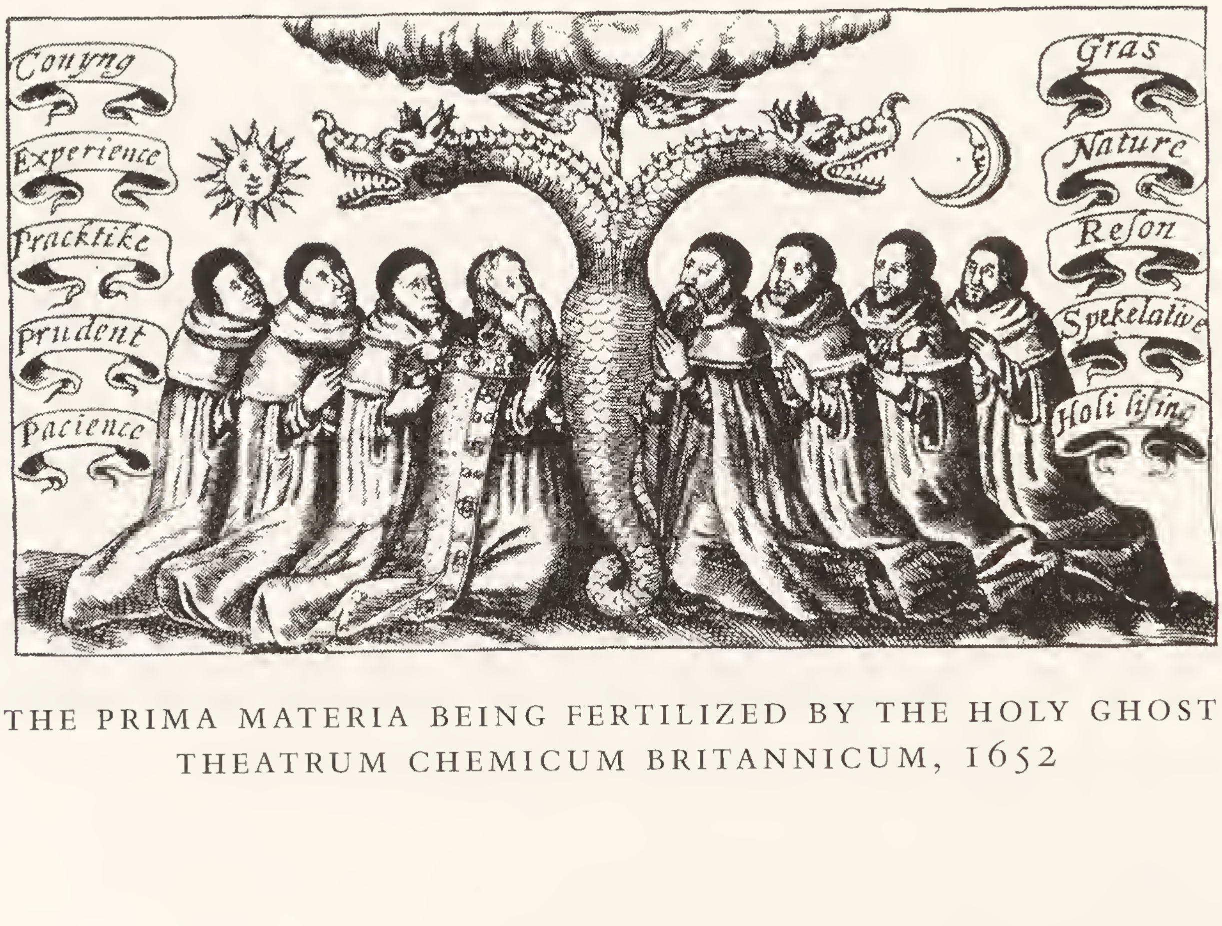
Health and safety were never the issues in outlawing MDMA. The risk of dying from MDMA is about the same as dying from prescription drugs, oral contraceptives, or from choking while eating, and a thousand times less than from using tobacco or deep sea fishing (DanceSafe 2000). The war against MDMA is a cultural and a religious war, carried out with all the zeal of rooting out heretics.

When Augustine condemned both black magic (goetia) and white magic (theurgy) as "criminal tampering with the unseen world," he wasn't condemning recourse to spirits. He was condemning recourse to spirits that weren't on the right list, his list. A recent British law has outlawed every chemical in the Shulgin's book *Pihkal.*

Wrong list.

The Myth

Some say that the whole universe, the great dancing play of light and form, all the green trees and bushes and grasses, the rivers and streams, is Vishnu dreaming. That sometimes he will shift in his sleep, a kalpa will end, the great castles and



THE PRIMA MATERIA BEING FERTILIZED BY THE HOLY GHOST, THEATRUM CHEMICUM BRITANNICUM, 1652 cities will wash away in a flood, and the DJ will put on a new track. Meadows and forests are covered with sand. Dry winds blow and zebra-skinned dunes cover the libraries and foundries, the great gardens and the backyard swings. Lake Lahontan dries to a long salt flat.

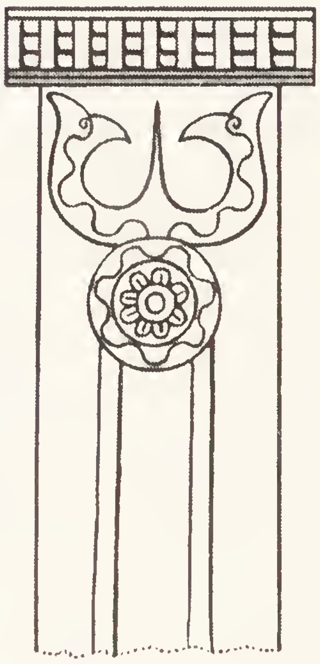
He exhales, and ships arrive on a new coast and furl their sails. People with stone-tipped spears wander through a wide pass. The telephone rings and it's her—she has returned your call. She's friendly. She's interested. Some say.

Some say it is all a little worm that twists and turns, another world beginning: volcanoes, ferns sprouting on dark lava flows, water dripping. Outriggers cutting across the great blue Pacific. Some say. Some say the worm is the thousand-headed World Serpent, Ananta, that Vishnu rests upon while Lakshmi massages his feet. Some say the Serpent is the Great Devourer, is voracious. Or that the serpent is the World Boa, or that the worm is red, and the universe a turning. Some say.

Others say that it was Coyote.

CORRESPONDENCES

PHASE OF MATTER:	Solid
PHYSICAL CONSTANT:	Cosmic Density, Ω
PLANET:	Neptune
PLATONIC SOLID:	Sphere
POISON:	Love
PROPORTION:	Integral
QUANTUM FORCE:	Gluon
REALM OF PLEASURE:	Solar Plexus
RITUAL EVENT:	Divorce
ROCK:	Shale
SEASON:	Solstice
SENSE:	Intuition
SEXUAL POSITION:	Sixty-Nine
SIGN:	Ursa Major
SIN:	Adultery
SOCIAL EVENT:	Ritual
TAROT KEY:	The Lovers
TIME OF DAY:	Late Afternoon
TOOL:	Torch
VIRTUE:	Compassion
VOWEL:	Dipthong/*ey*



The Ally Black light. Trance beat. The Devi-girl sprouted four arms, right before us. We kept dancing.

> *I disguised myself as Richard Francis Burton entering the gates of Mecca. It was hardly a disguise. I spoke Arabic fluently, and a number of other languages I thought might prove useful: Phrygian, Bengali, Greek, Portuguese. In my years of travels I had learned the names of hundreds of gods, and knew the proper offerings for each. I'd worshipped Christ. I'd worshipped Dionysus. I thought I had seen it all. I was wrong.*

Facing the Great Machine. Neural implants. Twitching. Could no one else see the fine threads pulsing and emanating from the computer. The Bacchants were chanting "surrender, surrender." I glimpsed Kali. Or was it Cybele? I closed my eyes and let the rhythm wrap around me like a boa. When I opened my eyes the Controller was staring at me from the stage. He'd seen right through me.

I laughed. And kept dancing.

> *Freedom. Shiva. Ma.*

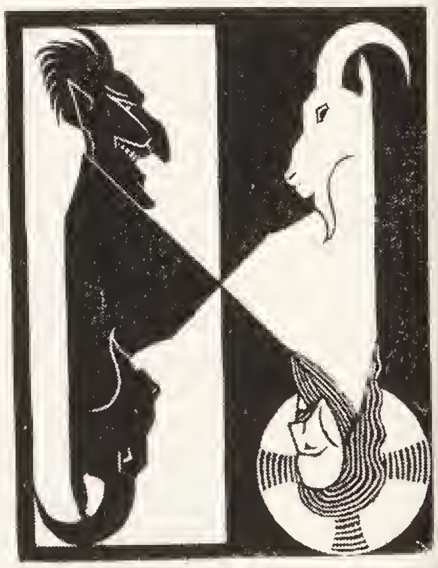
The Myth Some say that the world was a place that was all good. There was no death. There were no lies. Everyone was happy and lived in light and ate only fruit. It was like this. All things were good. Until Coyote decided he liked the smell of rabbit fur. He grabbed a rabbit and put his face in it and started eating, and one thing led to another until small, wet, red things began appearing in the world, crawling and begging until they grew old and lost their eyesight and their bones ached and they died in pain. And that's the way it is, since Coyote fucked things up, some say.

Some say technical discourse creates a distorted image of the world.

The Ally The celebrants—some painted, some wearing devil horns, bits of day-glo.

Devil-horns. Brings a smile. I remember.

> *There was one. One in the class. One in the regiment. One in the court. One in the Church. Who raised his hand. Said, "Excuse me . . . I have a question." They beat him and threw him off the property. Defenestrated. He fell to the ground. Plants softened his fall. Exile.*
>
> *Just one more act, he thought, just for the aesthetics. He raised his fist to the sky. The kind of man would bite the hand that fed him. Like an animal. Wild. His fingernails scratched at the black sky. There were sparks.*
>
> *Thus Adam became Lucifer, the Light-Bringer.*



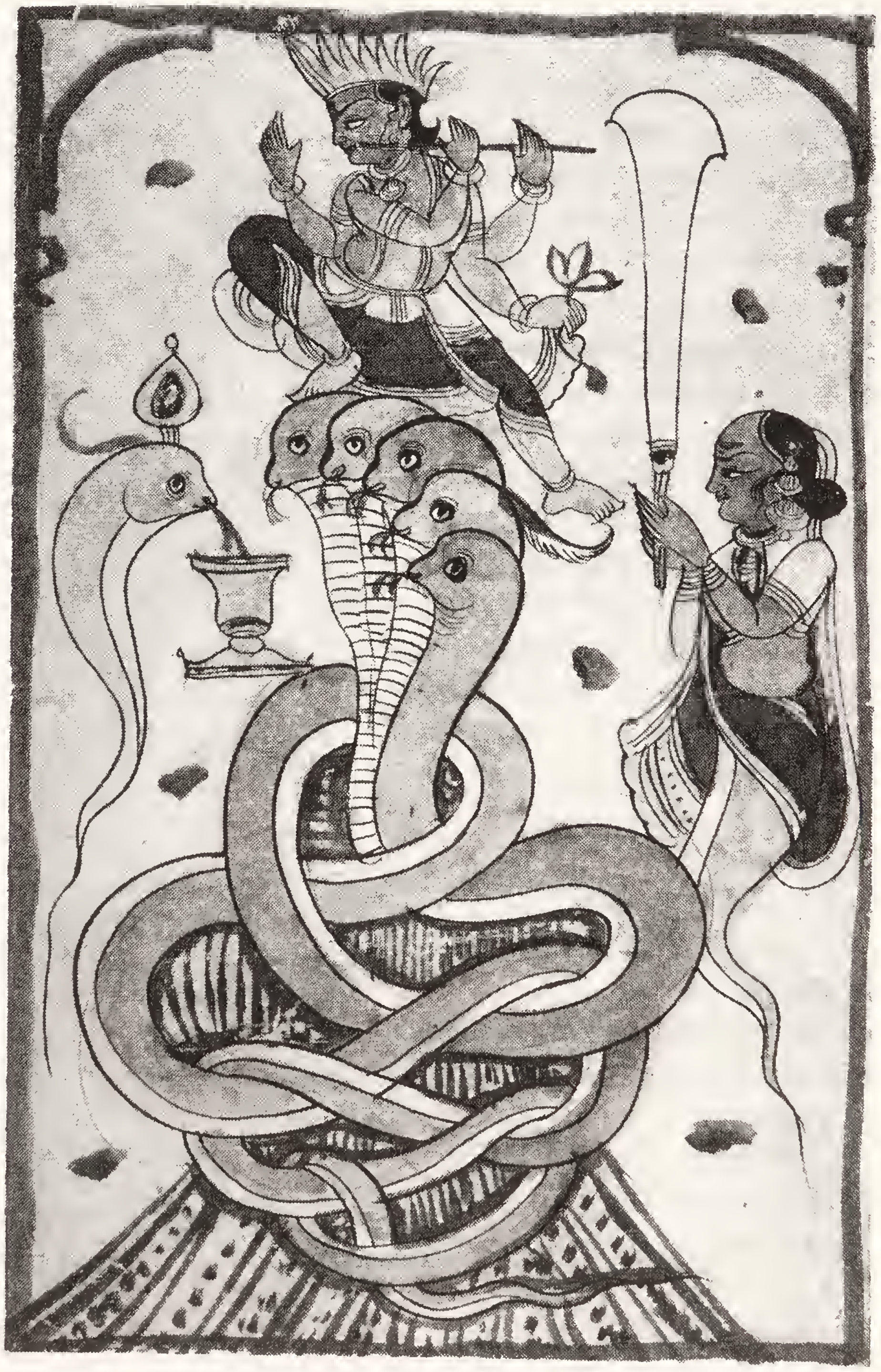
ESCHER, 1921

The DJ changed tracks. A new goddess appeared, still devouring. No one stopped dancing.

Bhakti.

In Techno-Trance we have returned to the Clock, where our excited journey began. The great devouring machine—not broken, but attuned. Stamp mills, conveyors, pulling vinyl off the line, working at the machine's pace. Mills, coal burning, Babbage and Ada somewhere making their drawings and equations. Accepted and worshipped, that the great cracking of the continuum devour all thought, all traces of conception, every beginning swallowed up as it emerges from the coils of the serpent that is itself the devourer. *Automatia*, joining, really, with Krishna, dancing towards Liberation.

Hare, Hare



KRISHNA SUBDUING KALIYA,
NORTHERN INDIA, 19TH CENTURY

Dancing is the quintessential human activity. We may never know which came first, dancing or language, but if William McNeill (1995) is correct, keeping together in time, rhythmic dancing, was the crucial cultural innovation that allowed early *homo sapiens* to form large, stable communities.

Throughout history and what we know of prehistory, rhythmic dancing has been the vehicle for group bonding and identity, and the gateway to trance and prophecy.

Ghost-dancing, the drum machine
driving relentlessly towards the New Millennium.

Some say. Some say the world was created by Shiva dancing.

> *I merely suggest that bands that were successful in cultivating community-wide performance, insulating emotions thus aroused from the mating game, had an important advantage over any groups that failed to consolidate fellow-feeling with the entire community by dancing together. If that was so, we can assume that community-wide dancing was in fact effectually separated from sexual pairing off in most or all early human communities. It follows that the direction dancing has taken in recent centuries in the western world [i.e., paired dancing] is exceptional and may even be regarded as a social pathology.*
>
> *—William McNeill*

Thus communal dancing is a reformation.

Even in the darkest Goa spins there are traces of humor and playfulness within the devotional intensity. Few things are certainly Good, but playful devotion is not a bad square on which to place a wager.

Hare, Hare

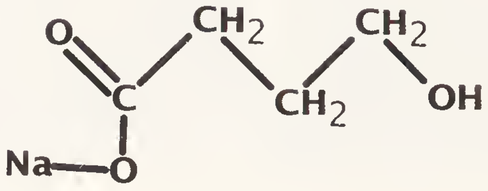
GHB

Common names GHB, G, Liquid Ecstasy, Gamma-hydroxybutyrate.

Chemistry Gamma-hydroxybutyrate.

Related Substances Gamma-butyrolactone (GBL), 1,4-butanediol.

Pharmacology / Toxicology All three of these substances are naturally occurring chemicals in mammalian tissues. Related chemicals are common in plants, animals, and fungi. The plant ally has here transformed herself, through glutamate, the Krebs cycle, and several hundred million years of evolution. GHB is a metabolite of gamma-aminobutyric acid (GABA), an important neurotransmitter, but the presence of 1,4-butanediol in mammalian tissues presents an alternative biosynthetic pathway (Barker 1985).

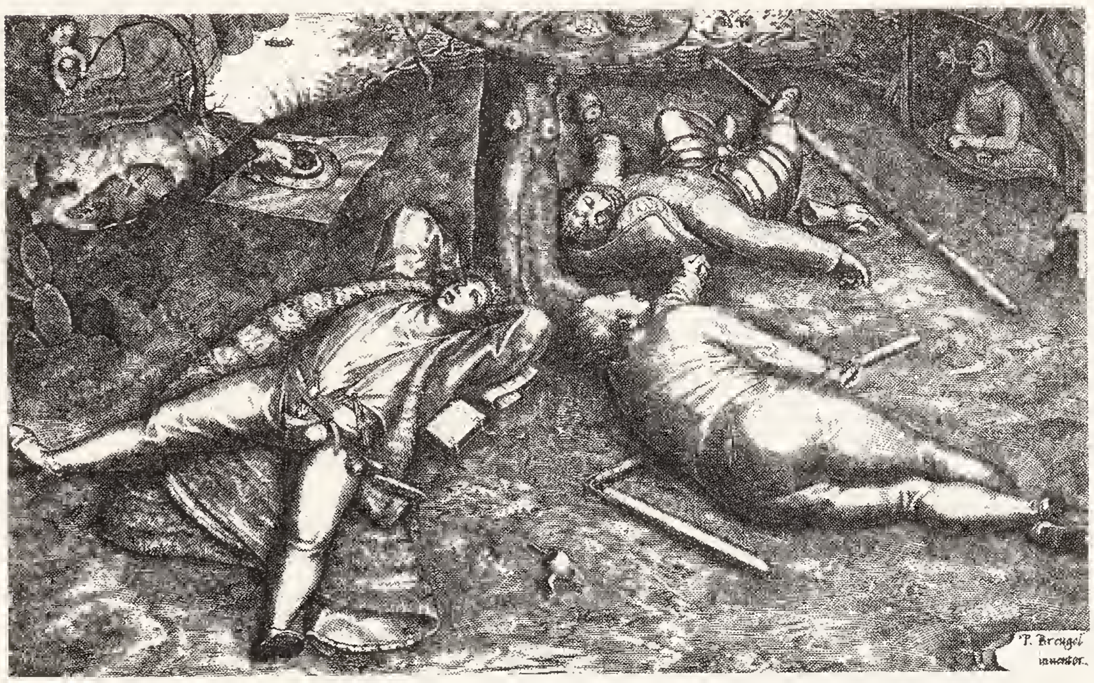


GHB (Sodium salt)

GHB functions as a neurotransmitter in its own right: it has specific receptor sites, it is endogenously produced, and it is concentrated in specific areas of the central nervous system (Beardsley 1996). GHB is generally considered to be an inhibitor of striatal dopamine release. Several experiments that have shown GHB to be a dopamine enhancer may have to do with interaction with anesthetics, as one study found that GHB enhanced dopamine release only in anesthetized animals, while inhibiting dopamine release in animals that were awake (Howard 1997). GHB is also a weak agonist of the GABA-B receptor, and perhaps also the GABA-A receptor, at least at low doses (Lobina 1999, Lingenhoehl 1999, Mathivet 1997).

The highly selective inhibition of dopamine release makes GHB an important neurochemical research tool. Medically, GHB has been used as an anesthetic, and it is an effective and important drug for treating narcolepsy. GHB is also used to treat alcoholism and to relieve the withdrawal symptoms of heroin addiction. Its use for combating the lingering craving for cocaine is also promising (Schmidt-Mutter 1999). In an experiment with rhesus monkeys, based on low reinforcing stimulus substitution results, researchers concluded that "GHB has, at most, low potential for abuse" (Woolverton 1999). More recent experience has shown that this is not quite the case.

The mechanisms for the full range of GHB's overt effects are complex and not well understood. GHB has been used as a model for petit mal epilepsy in research. In low doses, GHB is used by body builders as a "fat burner." At medium doses, GHB has a euphoric and disinhibitory effect. At high doses GHB puts you to sleep. The most dangerous aspect of GHB is that the difference between a medium and a high dose is very small, and once GHB is dissolved in water the dosage becomes a matter of oral transmission.


P. Bruegel inventor.

THE LAND OF COCKAIGNE (DETAIL), BRUEGEL, 1567

As with any tranquilizing-like drug, cases of habituation have been reported, though not on the scale of benzodiazepines or barbituates. One man, who had taken GHB on a daily basis for two and a half years suffered mental agitation, elevated blood pressure, and tachycardia for some hours after quitting and was treated with tranquilizers for four days (Craig 2000). One could expect similar symptoms from shorter term use as well (see notes).

Overdoses of GHB are fairly common, though rarely life-threatening unless alcohol or other drugs are involved. The most common symptom is a deep and unrousable sleep. Intubation may sometimes be necessary if there is choking or if blood oxygen levels fall below normal. Full recovery usually occurs in four to five hours. As with alcohol overdose, the main danger is from vomiting and choking. Bradycardia (a steady but slow heart beat) is another common symptom, and in extreme cases neostigmine may be needed as a reversal agent to prevent respiratory arrest and death. Such cases are rare, but extremely well-publicized. In 1997 it was reported in the Journal of Toxicology that "no deaths or long-term problems have been associated with GHB abuse" (Tunnicliff 1997). That has changed.

Harrington et. al. (1999) report a nearly fatal reaction from a small dose of GHB in a man taking HIV-1 protease inhibitors. Severe liver dysfunction prolongs the half-life of GHB in the body, though only moderately (Ferrara 1996). GHB is present in the body *at all times,* and GHB levels rise naturally in post-mortem tissues.

Effects

"Like a valium and a drink." Or a good night's sleep in half a night.

Matters of State and Liberty

GHB was ostensibly outlawed as a "date rape" drug, riding the coattails of sensationalist publicity generated around Rohypanol. President Clinton signed the "Hillory J. Farias and Samantha Reid Date-Rape Prohibitation Act" on February 21, 2000. Ironically, there was no sexual assault involved in either of the two cases. Hillory Farias shared a Sprite with a friend at a local club. When she returned home, complaining of a headache and being tired, she spoke to her grandmother, went to bed, and died sometime during the morning hours. The autopsy could not reveal the cause of the death. A month later, local police decided that her blood should be checked for the new "designer date-rape drug," GHB. GHB was indeed found, as it would be in any corpse, but nonetheless her death was ruled a homicide.

Nothing about Hillory Farias's symptoms is consistent with GHB poisoning. It is much more probable that she died of a congenital heart condition, as had one of her uncles. A niece and a nephew had each had open heart surgery. Her heart had never been examined, as it had been donated before the autopsy—explaining why the coroner was unable to determine the cause of death.

Samantha Reid did die from GHB poisoning. Four defendants, who caused her to unwittingly consume a lethal overdose of the drug, were convicted of involuntary manslaughter and poisoning and given long prison sentences. There are already laws covering nonconsensual sex, severe felony laws. Criminal acts are just that, and morally indefensible, but they have nothing to do with the responsible use of an approved food additive and dietary supplement by millions of Americans.

With the possible exception of dimethyltryptamine (DMT), GHB is the first human neurotransmitter to be placed in Schedule I of the Controlled Substances Act, illegal to possess and manifestly declared to have no medical value. Kafka would have smiled, grimly.

Effects Quotes are from Earth Erowid, and we will follow Erowid's general outline. Dosages are subject to idiosyncratic reactions. The wise doctor will follow the methodology worked out by mycophagists, experimenting with unknown wild mushrooms. Start low. Also, it is important to notice that there is very little difference between low dose and medium dose, or medium dose and heavy dose, or, especially, between heavy dose and overdose. As being comatose in public is unseemly as well as unprofessionally vulnerable, heavy doses should only be experimented with, if at all, in a secure environment (like, your bed).

LOW DOSE (.5 TO 1.5 GRAMS):

Tranquilizing, mildly sedative, calming.

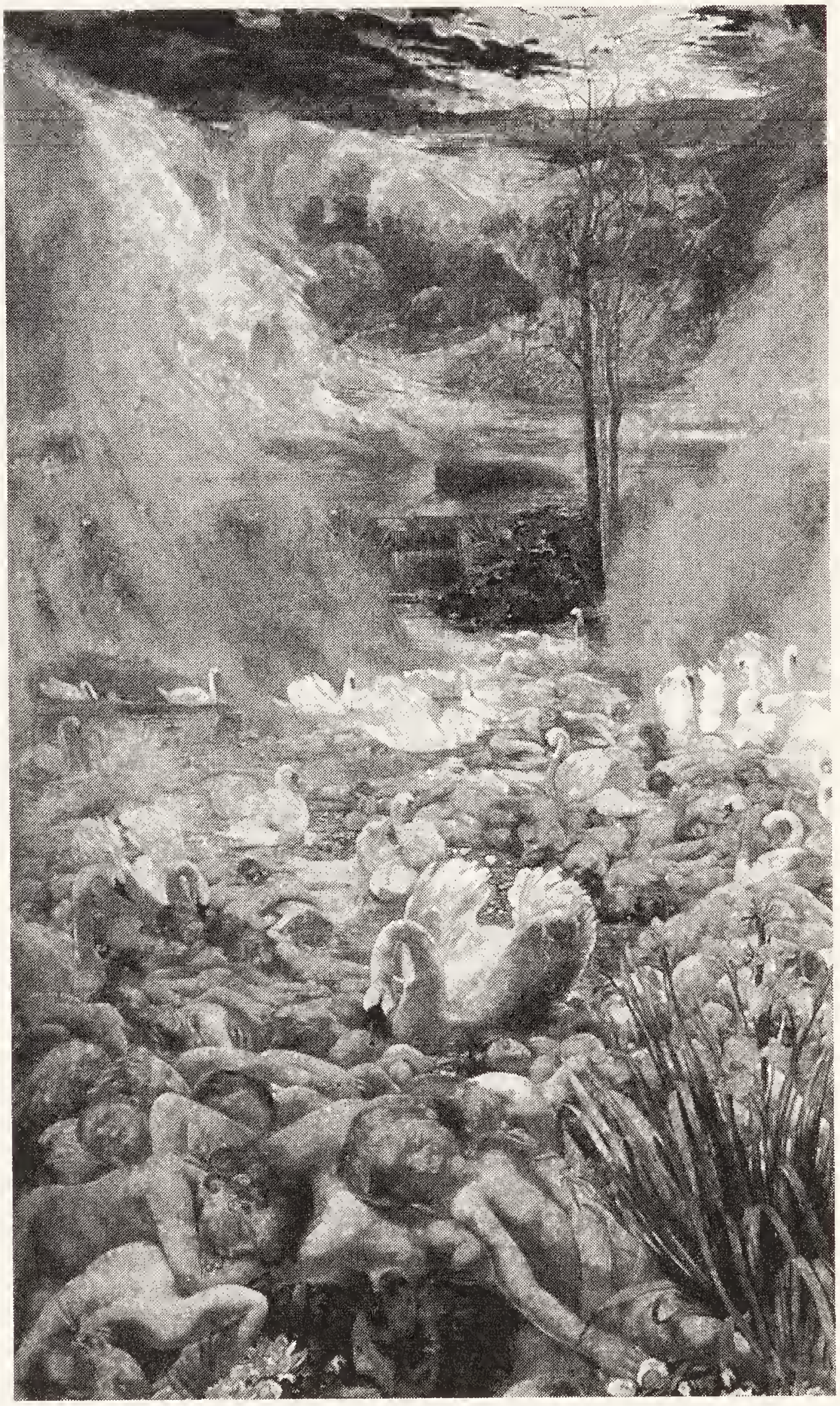
> *Effects similar to those of one to three drinks of alcohol.*

The disinhibitory effects, for some of us, are quite stimulating. Thus, some use light doses of G at work, like others use Xanax or Valium. Adepts of our way should immediately recognize the danger of dependence and habituation, and proceed accordingly, eyes open.

MEDIUM DOSE (1.0 TO 2.5 GRAMS):

Strong motor effects. Some disequillibrium, sometimes dizziness. Positive mood changes. Socializing: talking, dancing, listening to music. Laughing. Or for orgies, everyone feeling loose and randy. Like being inebriated without being drunk Or like being drunk without being foggy. It's difficult—the same adjectives apply, but it's different. Male erectile capacity generally increased, though orgasm can be delayed until the next morning. A big favorite of many of our more senior couples. Some women have also reported delayed orgasm, but the opposite seems more generally true.

In spite of impaired physical coordination, some very dear crazies I know like to go roller blading, reminiscent of those old rock climbers who would head for a moonlit face after a night of drinking.



THE LAKE, THE SLEEPING WATER,
LEON FRÉDÉRIC, 1898

HEAVY DOSE (2.5 TO 3.5 GRAMS):

Definite staggering. Oblivion is near. Some relish the euphoria, others succumb to nausea. The line between an enjoyable heavy dose and a seasick-like vomiting is extremely thin and blurry. It seems crazy to take a heavy dose of GHB without a mattress and comfy blankets nearby. An empty stomach maximizes the effects of GHB, the same or even more than it does the effects of alcohol. The presence of alcohol can dangerously increase the knock-out and nauseating effects of GHB, while inhibiting the positive empathogenic effects.

OVERDOSE:

> *The overdose range for GHB can be as little as 2 grams, depending on body weight and individual sensitivity.*

Overdose here means a deep, unrousable sleep, sometimes characterized as a coma. This state typically lasts from one to four hours. Some people use a dose between heavy and "over" to try to get a full night's rest in half a night. Those experienced enough to explore these dosages must be sure that those around them are fully familiar with the expected effects, and will not mistake such effects for a life-threatening poisoning. Waking up from a GHB overdose is *much* more pleasant than waking up from an alcohol overdose.

POISONING:

> *We're defining a level dosage above Overdose in order to highlight the effects of extreme overdoses. While many overdoses consist mainly of heavy sleep, some are life-threatening. GHB poisonings are characterized by very low breathing, convulsions or twitching, vomiting, complete nonresponse even to "deep pain," fixed pupils, etc. GHB poisoning victims should receive medical care immediately.*
>
> *—Erowid*

AFTER-EFFECTS:

Some experience a mild fog or grogginess the next day, but many others find the sleep so deep and restful that they awaken energized and refreshed. Some find that using GHB more than once or twice a week increases the occurrence of morning-after grogginess.

Poesis GHB is usually prepared by saponification, treating gamma-butyrolactone with sodium hydroxide. Like making soap.

The Ally

> *Saying "do you feel like taking GHB?" is like the opposite of saying "I have a headache."*
>
> *—Benny*

Effects Slovenly and sluttish. Tactile sensitization. "The most amazing known aphrodisiac for women." Not bad for men either.

> *Unless you fall asleep.*

Leisurely groveling in semiconscious prurience. Or like playing a consensual game of "date rape."

The Ally For talking about those hard-to-talk-about things. It's a sleeping pill for the Critic. Crying comes easily and cleanly.

Effects Because of the inebriating quality of GHB, talking can take on a certain rambling quality, and listening and hearing sometimes wander away from each other—you are not interrupting, but your thoughts are elsewhere. That is very different from the deep, empathetic listening so characteristic of MDMA.

The Ally

> *It's dangerous. It should be illegal. If you don't know what you're doing, you could fall down.*
>
> *—John Lilly, on GHB*

How Taken Usually dissolved in water. Tastes like baking soda, at least on a good night. Alcohol can lead to vomiting. Be sure you know your dose. Keep a little measuring cup, with a line on it. Some health-conscious users prefer the potassium salt.

Effects Sleep. Unless you stay awake partying.

The Ally On gifted occasions, lucid dreaming that can be entheogenic and oracular, like a full LSD flashback. All you have to do is step forward and ask the question.

THE GIFT

♌

"Try some of this," she said, "it quiets the Critic."

I thought of that, while trying to write, anxiety writhing me out of my chair.

CRITIC:

> *It's not good enough. Your friends are just being polite. No one will take it seriously. They probably won't even like it. You don't really even know the rules of good writing. You misspell elixir every time you write it.*

SELF:

> *So when's the last time you wrote a book?*

CRITIC:

> *I would not stoop to add mediocrity to the great canon of Western Culture.*

SELF:

> *No, you just sit there and criticize every new creation, every innovation, until it all stops and you are left with your tired and dusty classics. You leave it to time, the worms, and the spiders to make art for you. Thank you for your input. Without you, I might have ended up a real writer, and where would I be then? Busy writing "good" books on contract, one after another. Or in some staid lecture hall, feeling full of myself.*
>
> *Instead of like this, stumbling along mostly out of my mind, scribbling whatever comes.*

DREAM STUTTERS

Paths differ in emphases, if not in ends. Some tend towards heart, some to mind; some towards faith, some towards freedom. None of the cosmopolitan religions are using plant allies in any other than a symbolic way, though most of them have traces of sacred plants in their prehistory.

Why were power plants abandoned? Perhaps there were issues of efficacy or reliability. There is a clear repeating trend: initial universal access, then usage restricted to specialists, followed, finally, by symbolic ingestion by priests. There may have been issues of gender politics involved, from predominantly female plant knowledge in the Upper Paleolithic, at the least for food and fiber, to shamanism by men and women (or men *as* women), to a more and more strictly male priestly caste supporting a central state government. Ritual inebriation rarely seems to find favor with centralized states. But why is this?

Too many wild cards, perhaps. In a deck that centralized authority always wants to stack in their own favor. Ancient kings and emperors would close oracles the way dictators close newspapers. Marxists and other secular humanists argue that magic is reactionary, but this viewpoint seems to be based more on ideology than on history. One who has learned to face the gods directly has no fear of facing a king.

> *I kept rolling away from her, but she'd chase after me. Finally I stood up and said: "This is not a game. This is Sacred Space. This is Divination Space."*
>
> *The Council appeared instantly. They didn't look much like gods. Some of them were just kids. None of them looked special, or even particularly bright, but each of them glowed faintly with a yellow-orange aura. A ruddy-faced young man with short hair was staring at me with full psychedelic intensity. I wouldn't have thought of him as one of the allies, but there he was, and our rapport was total. He was one-of-those-to-whom-one-could-not-lie.*
>
> *"What about the medicine?" he asked.*
>
> *"I've been avoiding it," I said.*
>
> *He wasn't judgmental. He didn't care if it was just playing. He just didn't want equivocation.*
>
> *"And the medicine? Is it honest enough to share with the circle?"*
>
> *Maybe I shouldn't be doing this on a school night, I thought.*

Even the finest spiritual (and secular) traditions devoted to emancipation, compassion, and reverence have castigated, or at best neglected, "the Great D's":

Dreams, Divination, and Drunkenness.

They are the realm of Delusion, to which we might add Desire and Delight.

Dreams, to the reductionist, represent only illusion. Divination is called superstition, Drunkenness escapist stupor. Even Delight is suspect as prurient indulgence, while Desire is the root of suffering.

> *I saw the Medicine sitting at the end of the bed. It was myself. Or a part of myself: the public self, the worker, the engineer, the one keeping it together, the one out doing all the dirty work. He looked weary.*
>
> *I called to him. I sang.*

We proclaim our own axioms:

- Delight, as Blake said, is energy, the life force itself.
- Dreams are revelation, the substrate of consciousness.
- Divination is a momentary intersection, a chance to act.
- Drunkenness, for us, means enthusiastic rapture, ecstatic sobriety.
- Desire is the spark of the Universe, what there was before the Beginning.

Come home now, come home all you wandering tribe
Come back to the circle, it's safe now inside.

You've been so long out there riding alone,
Come back to the circle, come back to your home.

It's all drunkenness, it's all leaf-dreaming. In every realm. Let's dream in this world. Stress and personal crises are just your calls to the allies, to your powers. Fear is just a phase shift, their cloaking device.

Divination occupies that hazy ground between magic and science, between chance and teleology, between fate and freedom. It is difficult for us to believe in gods and spirits, the way we believe in molecules, or electrons. It's not that coincidence, as statistical apologists like to remind us, is so unlikely, but that divination is a feeling of *presence* that brings the hair on the back of the neck to attention.

You who are struggling, you who are brave,
Rest from your trials, there's no one to save.

You picked up the world on your shoulders I know
Now set down your burden, come home now below.

QUIJOTE & SANCHO,
DORÉ, 1863

Thus we sit. Thus we practice our Ground State training. To let our allies enter and say hello.

Afraid of
being reminded of
my own ignorance

I avoided meetings
with friends and
without realizing
began avoiding myself.

We, who work with demons,
must not succumb
to such denial,
must not, like Peter,
deny our own
teachers.

Therefore we return
to witchdoctor's corner,
laid out, long-legged & easy,

checking in on the neighborhood,
at curtain time,
and the curtains are rolling.

But there is a story, a whispered story. A story never committed to paper. That the medicine can be found in the poison itself. That we are surrounded and steeped in delusion, but that every apparition, every manifestation of the ever-changing and enchanting dance of Maya, is the Great Window, the Great Gate. This, indeed, is the delight of delusion. It is entirely fitting that the bodhisattva of the Maya Gate be of the lowest grade.

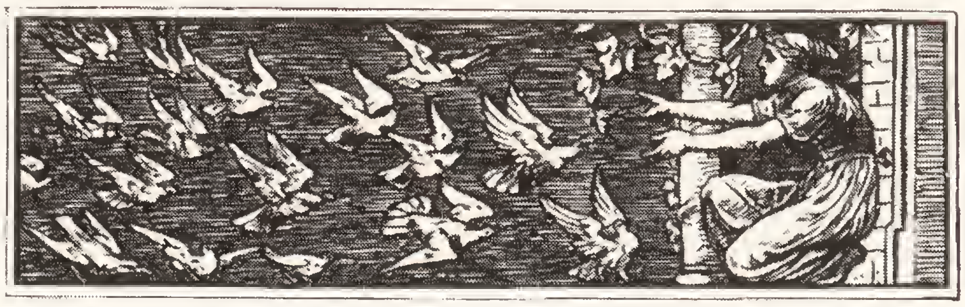
網明

"net" "light"

"Seductive Splendor," or "Light of Delusion," or "Ensnared Light." Mōmyō, the Bodhisattva of Delusive Wisdom. Jāliniprabha, who holds the shining net to save beings in all the six worlds.

We greet our mother, Maya: *Avidyā,* the root of existence.

The net that ensnares is the net that saves.



THE RETURN, CRANE, 1886

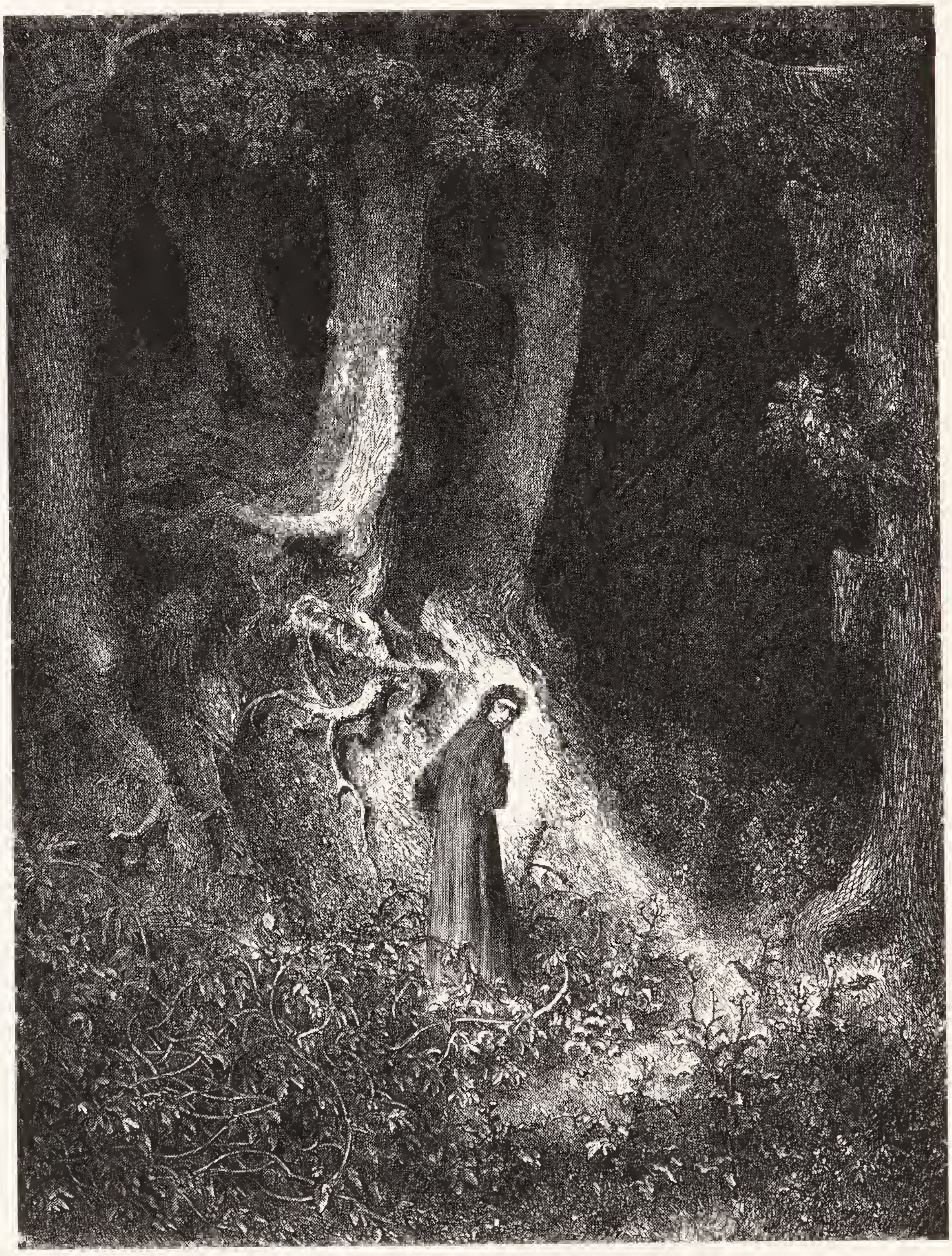
You've been so long out there fighting the wind,
Come back to the circle, find peace now within.

Come home all you spirits, come home all you sprites,
Come home all you poisons, come in from the night.

We believe we see solidity. Threads cross, both choices are taken. The two worlds exist in parallel, perhaps, at some future time, to cross again.

It's difficult to proceed. The story is told, but it's not quite right. It's just a snapshot, blurry at the center.

Birds chirp. And it's morning.



AT THE EDGE OF THE FOREST

REFERENCES

I. COMMENTARY

On the Nature of Poison

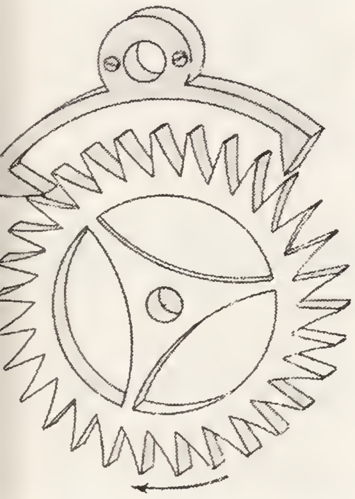
p. 3: Nietzsche quote from *The Wanderer and his Shadow.*

Nigredo: A Turn of Darkening

p. 7: Where "the man" here is Vicente Huidobro—see "Canto III" in *Altazor.*

Coffee

A senior art student at Amherst College, as a project for his "social sculpture" class, devised a 24 hour mock ban on coffee at the campus to raise awareness about drug law reform. Signs were posted about the health risks associated with coffee drinking and the alarming increase in coffee consumption among students. Coffee machines around the campus were emptied and turned off. The artist, Andrew Epstein, dressed up in a suit and held a press conference to explain the need for the ban. While many students were outraged (and booed), some nodded their heads thoughtfully. Friends of Epstein were posted around the campus selling "black market" coffee out of the backs of vans.



ANCHOR RECOIL ESCAPEMENT, INVENTED C. 1671

p. 23: Concerning the keepers of European herb lore, Daniel Schulke notes: "The demographic you suggest here is far from proven, nor is it culturally consistent throughout Europe or throughout time. For example, the Cunning Men of the British Isles (see Keith Thomas, *Religion and the Decline of Magic*), etc."

p. 25: Illustrating how any song written in ballad meter could be sung to any ballad tune, Gary Snyder once sang for me Blake's "Mock on, Mock on, Voltaire Rousseau" to the tunes of *Mary Hamilton, Barbara Allen,* and *The House of the Rising Sun*. Actually, Blake violates the fourteener in the second line and it works better if you drop the second spondee. You can sing most of Emily Dickinson's poems to *The Yellow Rose of Texas,* which is 7676. The best metrical index I've ever seen is in the old *Methodist Hymnal,* which lists hundreds of tunes, all arranged by meter, as an aid, I suppose, for hymn writers who need to find a tune to fit their lyrics. I spent many hours studying it in my youth, Sundays.

p. 35: A new study has found that high homocysteine levels are as strong a predictor of future Alzheimer's as is heredity. No causal link has been established, just the correlation.

On the plus side, the *Journal of Agricultural and Food Chemistry* (March 2002) reports that several chemicals in roasted coffee beans loosen the grip of the bacteria that cause tooth decay.

p. 39: Further underscoring the destructive power of a global economy on peripheral countries, in 2001 world coffee prices plummeted to a record low. Coffee growers in many poor countries face utter ruin, and workers have been laid off. (Despite Adam Smith, retail prices in developed nations have not fallen.) Coffee cooperatives have fared slightly better. As of this writing, it is possible to buy "Fair Trade" coffee in most American cities (even at some Starbucks).

Tea The story of Elder Lang and the tea brazier gods is in case 48 of *The Blue Cliff Record*. The Lin-chi case is from the *Transmission of the Lamp* (Chung-yuan, 1969), and is part of the *Record of Lin-chi*. Not all versions specify that Lin-chi was working in a tea garden. The Tung-shan story is section 28 of the *Record of Tung-shan* (Powell, 1986).

The great Ch'an master Chao-chou (*Joshu* in Japanese) is best known for his famous koan about the dog and Buddha-nature, the first koan given to Zen students in many lineages:

> *A monk asked Chao-chou, "Does a dog have Buddha-nature?"*
> *Chao-Chou answered, "Mu."*

Here is the whole case of Chao-chou and the tea, from Foster & Shoemaker's *Roaring Stream*, which book is recommended.

> *Once Chao-chou asked a freshly arrived monk, "Have you been here before?"*
> *"No, I haven't," the monk answered.*
> *"Have a cup of tea," said Chao-chou. Then he asked another monk, "Have you been here before?"*
> *"Yes, I have," replied the monk.*
> *"Have a cup of tea," said Chao-chou.*
> *The head monk asked the master, "You instructed the monk who hasn't been here before to have a cup of tea; I say nothing about that. But why did you tell the monk who's been here before to have a cup of tea?"*
> *"Head monk!" cried Chao-chou.*
> *"Yes, master?"*
> *"Have a cup of tea!"*

And I can't resist adding one more of Baisaō's poems, from the same book, based on the translation by Norman Waddell.

> *I emulate old Chao-chou:*
> *"Have a cup of tea!"*
> *I've stock for a thousand years,*
> *But no one's buying.*
> *If only you would come*

And take one good drink
The ancient craving
Would instantly cease.

Lu Yü wrote: "The essence of tea is moderation." True enough, I guess, unless one gets too deeply immersed in the subject.

Oh well.

Cacao p. 107: Some ungodly men: Investigative journalists Sudarsan Raghavan and Sumana Chatterjee, in a series of articles published in Knight Ridder newspapers (June, 2001), exposed the use of child slavery on cacao plantations in the Ivory Coast, the source of almost half of the world's chocolate. The problem has been exacerbated by the falling prices of cacao beans on the world market, another example of the social consequences of global economy on peripheral societies. Most of the boys are from neighboring Mali, sold to Ivory Coast farmers by middlemen. Some industry spokesmen preferred the term "indentured servitude," but as the boys are sold, locked up, and often beaten, slavery seems a correct description.

When Knight Ridder contacted the Chocolate Manufacturers Association, a trade organization, they at first stated that they were not aware of the use of slaves on Ivory Coast cacao plantations. As the Knight Ridder investigation continued, the CMA has accepted that such slavery is a fact and has funded a survey of 2000 cacao farms in the Ivory Coast.

Cadbury, following their progressive tradition, does not buy cocoa from the Ivory Coast. Other companies, such as Hershey Foods, Russell Stover Candies, Archer Daniels Midland, Godiva, and Maxfield Candy, expressed grave concern and promised to do what they could to address the problem. A number of large companies, including Mars (#2 chocolate manufacturer in the United States), Nestle USA, Blommer Chocolate, Ben and Jerry's Homemade, and Kraft Foods did not respond to the reporters inquiries about their use of Ivory Coast chocolate.

The reporters believe that boycott action would be counterproductive, only driving world cacao bean prices further down. The best solution is to raise public awareness of the problem and to extend the ideas of "Fair Trade Coffee" to chocolate. Cocoa and chocolate were not included in the list of products that federal agencies are prohibited from buying if made with forced labor. That oversight should be corrected.

◆

Xochitl and Gordon Wasson: A (Not So) Brief Poetic Critique

Wasson contends in *The Wondrous Mushroom* that *xochitl* in Pre-Conquest Nahuatl poetry is "a figure of speech for the entheogens and the entheogenic experience." First, Wasson tends to lump all the cultures and tribes of ancient Mexico together into one Mesoamerican culture. There are problems with this lumping. No matter how many of their statues they copied, the Romans were not Greeks. Within the Aztec Empire there were many cities and many peoples. And even within Tenochtitlan the Mexica probably constituted less than half of the population, and among the Mexica the commoners and nobles had their own lifestyles and likely differing belief systems. While it is clear that mushrooms were in common use by the "folk," or groups of them, the attitude of the Mexica nobility toward mushrooms seems much more equivocal.

> *The bad noblewoman is infamous, very audacious, stern, proud, very stupid, brazen, besotted, drunk. She goes about besotted; she goes about demented; she goes about eating mushrooms.*
> *The prostitute lives like a bathed slave, acts like a sacrificial victim, goes about with her head high—rude, drunk, shameless, eating mushrooms.*
> *The Bad Youth goes about becoming crazed on both kinds of Daturas and mushrooms . . .*
>
> —*Sahagún*

Nor is it clear that the Aztecs had any such concept as "entheogen" or "entheogenic," as Wasson does. That is our idea, not theirs. I find no evidence that mushrooms were classed together with morning glory seeds. They were distinct animals, we might say. But by trying to fathom just how the Aztecs did view the interplay of plants with medicine, ritual, and recreation, we might learn something about our own assumptions.

Wasson himself asks several of the right questions. Near the end of *The Wondrous Mushroom* Wasson offers several perceptive paragraphs about the differences between the herbal knowledge of the folk tradition and that of the written herbal. The physicians of the Aztec intelligentsia openly disdained the shamans and folk healers, though, as was their inclusionary style, they made some accommodation for them in state ceremonies.

TLINGIT SHAMAN
RATTLE, C.1800

> *The false wise man, like an ignorant physician . . .*
> *He has his own traditions and keeps them secretly . . .*
> *A lover of darkness and corners,*
> *a mysterious wizard, a magician, a witch doctor,*
> *a public thief, he takes things.*
> *A sorcerer, a destroyer of faces.*
> *He leads the people astray.*
> *—Leon-Portilla, Aztec Thought and Culture*

Wasson also notes the disparity between the chanting of the mushroom *veladas* he witnessed and the polished poetry of the flower-songs: "At opposite ends of the spectrum." He asks how they can be reconciled, but he never provides a satisfactory answer.

Wasson believed that Nahuatl poetry was the result of the "*élite*" [sic] of a pure culture of "Early Man" gathering annually about a giant effigy of a mushroom, ingesting mushrooms, then composing and singing verses in praise of the mushrooms amidst a noble entheogenic *agape.* He dismisses Father Garibay's claim that mushrooms were not a part of such events and states "how jejune, how flaccid, is this poetry stripped of the divine inebriants!" As to the possibility that the songs praising the fragrance of a flower might be just that, and not the praising of the fragrance of the mushroom, Wasson writes:

> *They were not only cultivated men but men of power in their world. Effeminacy is not a word that could be linked to them.*

Ironically, Tlacaélel's daughter, Macuilxochitzin, wrote poems about flowers—but all in the context of warfare.

> *With divine flowers,*
> *with flowers of war,*
> *is covered,*
> *with these becomes intoxicated*
> *he who is on our side.*
> *—tr. Leon-Portilla*

Wasson lists two dozen occurrences of *xochitl* from the four volumes of Garibay's *Cantares Mexicanos* and glosses almost all of them as "wondrous mushroom potion," or "entheogenic potion." But exactly half of Wasson's whole list are found in one poem, Nezahualpilli's "Song During the War with Huexotzinco," where the "flowery liquor of the gods" is much more likely the intoxication of blood than that of mushrooms.

Yaoxochioctica,
yhuintitiaqui a nopillotzin,
With the flower of the liquor of war
my prince has become intoxicated,
—Leon-Portilla, Fifteen Poets of the Aztec World

Leon-Portilla's translation may be questioned, certainly, but that blood may be a flower is well-attested by poetic usage:

That Noble Flower

. . . For now men fall in battle and that noble flower
flowing from their bodies
Tells nothing except how beautiful they might have been.
—Robinson Jeffers, Be Angry At the Sun

Nezahualpilli's poem contains numerous constructions mixing flowers, blood, war, and intoxication:

Vomiting blood they go
the owners of the spoiled flowers.
. . .
there the Cuxteca are intoxicated
with the shield's flowery liquor,
. . .
my great lords, those intoxicated with death,
. . .
the intoxication of strength

We do know that chocolate was a part of a soldier's daily rations while on campaign, but it seems more likely that the admixture was maize than mushrooms (Vietnam notwithstanding).

Wasson builds his thesis that entheogens are the key to Nahuatl poetry in five sections. I don't wish to argue that there are not allusions to altered states of consciousness in the poems—such is certainly the case—so I will not attempt a methodical critique. The problem that I see in Wasson's paper is more one of *approach*. But a brief overview is in order.

First, Wasson presents four poems, or stanzas from poems, from Father Garibay's *Poesia Nahuatl,* in which "flowers" are interpreted as meaning "entheogens": inebriating mushrooms or morning glory seeds. I will discuss the use of "flowers" in these poems and in other parallel constructions.

Second, Wasson points out that the verb *cueponi,* usually translated as "open their corollas," has another meaning: to burst forth as a chick from an egg (to hatch). Wasson cites the "bursting forth as from an egg" as evidence that mushrooms rather than flowers are the subject of the verb. I think "hatch" only broadens a metaphor principally concerned with "coming into being." Besides, *Psilocybe* mushrooms lack the universal veil that is so conspicuous in the *Amanita* genus, and possess the "hatching" quality less than, say, a flower blossom emerging from a bud.

Third, Wasson points out the deep camaraderie spoken of by the poets associated with their gatherings, and how much it sounds like the bonding experienced among fellow entheogenic travelers. To this I would only point out that camaraderie between poets, in spite of their often petty backbiting, is not dependent on the sharing of plant entheogens. Li Po and Tu Fu come to mind, as do Shelley and Byron. Among the Inuit, the special relationship that develops between two poets is given a name: "song cousins." They swap wives when they are together and are able to criticize each other, satirize each other's songs, and generally tell "anything." The only entheogens of these people of the snow are the great expanses of the snow itself.

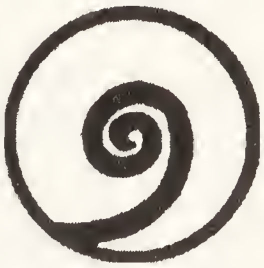
> *All songs are born to man out in the great wastes. Sometimes they come to us like weeping, deep from the pangs of the heart, sometimes like a playful laughter which springs from the joy that life and the wonderful expanses of the world around us provide. We do not know how songs arrive with our breath—in the form of words and music, and not as ordinary speech.*
>
> *—Kilimê, East Greenland Eskimo, recorded by Knud Rasmussen*

After friendship, Wasson considers synesthesia in Nahuatl poetic idiom, as in this poem in praise of Nezahualcoyotl:

On a mat of flowers
you paint your song, your word,
prince Nezahualcoyotl.
Your heart is in the painting,
with flowers of all colors
you paint your songs, your word,
prince Nezahualcoyotl.

—tr. Leon-Portilla, 1992,
cf. Garibay's translation in Wasson, 1980.

But synesthesia is only one possible explanation. Nahuatl books, the painted scrolls, filled with colors and flowery drawings, were the repository of the sacred word. Words *were* painted, literally, especially the words of the gods. And as sacred words are painted into scrolls, this whole world is the painting of a god.



TIBETAN ORIGIN OF THE UNIVERSE

> *Your heart lives in the painted page,*
> *you sing the royal fibres of the book.*
> *You make the princes dance,*
> *there you command by the water's discourse.*
> *He created you,*
> *he uttered you like a flower.*
> *He painted you like a song:*
> *a Toltec artist.*
>
> *—from Brotherston, Image of the New World,*
> *quoted in Clendinnen, The Aztecs.*

Besides, "seeing words" as a poetic trope is almost cliché.

> *Easy for you to say, friend, you've seen them.*

Wasson closes his chapter on "flowers" by discussing the common metaphor *anelhuayo,* "without roots." I say more about this later, but the gist of the term, as I read it, has to do with "impermanence," and therefore "unreal," the corollaries of which the poets then explore.

Wasson never mentions *difrasisma,* the linking of two nouns to create a new idea, and a salient characteristic of Nahuatl poetry. We have already seen one of these *difrasismas: yollotl-eztli,* "heart, blood," used for chocolate. Other *difrasismas* are *in cueíl, in huipilli,* "skirt, blouse," referring to a woman in a sexual context; *in atl, in tépetl,* "water, hill," a town; *tlilli, tlapalli,* "black ink, red ink," the scroll painting, wisdom; and *in topan, in mictlan,* "the realm above, the region of the dead," both of which are realms that can be visited by the *nanahualtin,* the shamans, but that together connote all that is truly transcendent. The most important and recurring *difrasisma* in Nahuatl poetry is *in xóchitl, in cuícatl,* "flower, song." Flower-song is used to represent poetry itself, and the poetic act. Leon-Portilla glosses it as "metaphor," or "symbology," stressing something multivalent and abstracted whose absolute meaning can never be pinned down, an "as-ifness." But perhaps even better we can look on it as connoting "creative imagination."

Not only is *xóchitl* a common morpheme in the construction of a wide variety of words, by itself or in *difrasismas,* but the word also occurs in many different semantic contexts. *Xóchitl* is used to describe a man's desire for a woman of pleasure by Tlaltecatzin, one of the earliest poets of Texcoco. Flowers are used to refer to warfare, to spring, to fertility, to blood (especially sacrificial blood), and to cacao. The poets stretched the word to its fullest: its meaning is closest to "essence."

> *a flower, a book, a thought:*
> *dried grass, or rain on the roof*

If the flower is the essential, the song is the existential: flowers burst forth, but you have to sing your song. If we admit this concept of "essential becoming," the flower references soar to elegance: there is nothing "jejune" or "flaccid."

It is quite true that the role of psychoactive plants in Mesoamerica was largely ignored for a long time, and Wasson's role in correcting this error is paramount. But Wasson is somewhat unfair in his criticism of Miguel Leon-Portilla, who mentioned mushrooms some years before Wasson published his paper on *xochitl:*

> *If this life is only a dream, our words (because they are earthly) are incapable of coming near to "what transcends us, the beyond." In man's effort to forget that "one day we must go, one night we will descend into the region of mystery," he can seek consolation in the drunkenness produced by mushroom wine.*
>
> *—Leon-Portilla, Aztec Thought and Culture*

Mushrooms, where intended, seem to be mentioned explicitly, as in *nanacaoctli,* "mushroom inebriation," or *xochinanacatl*, the "flowery mushrooms." (Nahuatl double noun constructions are ordered, the first word modifying the second.) But this very explicitness argues against Wasson's thesis that the poets used "flower" to refer to mushrooms.

The best documented use of hallucinogenic mushrooms among the Aztecs, apart from the perjorative slurs on their use by commoners and fallen women, is among the *pochteca,* the long-distance cacao merchants who were hardly Aztecs at all. The *pochteca* would eat mushrooms and then continue by drinking chocolate throughout the evening. In these sessions the merchants would see their destinies. Some would weep, glimpsing death or calamity, others would be joyful, seeing that their future would be successful. All in all, according to the report, which could be biased, lamentations seemed to have predominated.

> *Oyanoconic in nanacaoctli, ya noyol in choca.*
> I have drunk the liquor of mushrooms and my heart weeps.

Moctezuma is reported to have served mushrooms to the kings of enemy cities, such as Tlaxcala, or their official envoys, at a state dinner called the Feast of Revelation. Moctezuma I had invited enemy kings to Tenochtitlan, but the practice had lapsed until Moctezuma II revived it. Again, it seems that, as with the merchants, the purpose of the mushrooms was in revealing the future. After one of these feasts, perhaps the last—as the Spaniards were marching westward from Veracruz at the time—Moctezuma had a vision that frightened and disturbed him deeply. The vision prompted him to try to bribe the Spaniards into turning around instead of confronting them—a stratagem that proved ill-fated indeed.

> *Meanwhile, in the countryside, in the mountains, the nightly mushroom ceremonies continued as they had for centuries.*

Did the Nahuatl poets know about the mushrooms? Certainly. From personal experience? Almost certainly, knowing the ways of poets. But we must remember that court poetry, taking Japan as an example, often invoked images purely through formalism—even Saigyo's invocations of nature have been criticized (incorrectly, according to Gary Snyder) as being merely formal. Were mushrooms the essential base of Aztec poetry, as Wasson maintains? I think not. But in any case, reading every occurrence of "flower" as "mushroom" leaves the poems one-dimensional—demeaning both the poems and the depth of the insights available from the sacred plants themselves.

Only poetasters are content with one level of meaning.
It has ever been thus, in every land and in every time.

Echoes of this reductionism are with us today when certain entheogenic spokesmen declare that *any* religion, and by extension any religious experience, *not* brought about by ingesting entheogenic substances is a sham based on "placebo effect." These people, whom we might term "mystical hardheads," seem to miss the forest because of (understandable) fascination with one particular tree. As it were.

Enough to make one prefer "hallucinogen" to "entheogen."
Right. And then there are those of us who think we're hallucinating all the time.

Perhaps the greatest of the Nahuatl poets was Nezahualcoyotl, king of Texcoco. Nezahualcoyotl lived from 1402 to 1472. He inherited two ancient traditions: that of the Chichimecs and that of the Toltecs. His father, Ixtlilxochitl the Elder, was instrumental in bringing about a resurgence of Toltec culture and fusing it with that of the Chichimecs. Nezahualcoyotl had a Toltec tutor, and thus a line to the wisdom traditions of Quetzalcoatl and Teotihuacan. It's not really surprising that the best poets were from Texcoco and Tlaxala, where the Toltec tradition was strongest, rather than Tenochtitlan. The Aztecs of Tenochtitlan have a way of coming off as Toltec "wannabes."

Choices, always choices: Ovid or Virgil, Pound or Eliot, Pascal or Descartes, Nezahualcoyotl or Tlacaélel.

Nezahualcoyotl grew up amid palace intrigue. He saw his father slain by the Azcapotzalcans, and it was another poet, Tochihuitzin (who later became ruler of Teotlatzinco), who saved his life by helping him escape. Nezahualcoyotl spent part of his exile in Tlaxcala.

During his years of exile Nezahualcoyotl made friends and established alliances, and became known for his wisdom. He was related to the Mexica through his mother, who was the daughter of the second ruler of Tenochtitlan. It was the alliance of Nezahualcoyotl with the Mexica that conquered the Tecpanecs of Azcapotzalco and Coyoacan, and made Nezahualcoyotl the ruler of Texcoco.

But if Nezahualcoyotl was Solomon (with some of David thrown in— Nezahualcoyotl once had the poet Cuacuauhtzin sent to his death on the front lines in order to marry his wife), Tlacaélel was Samuel, the power behind the throne. Texcoco was clearly subservient to Tenochtitlan. It is said that Nezahualcoyotl was against human sacrifice, but that all he was able to accomplish in Texcoco was to end the sacrifice of children. He is known for his sense of justice, and for writing "wise" laws. He was also an engineer and an architect, and designed some of the causeways and water systems of Tenochtitlan.

Nezahualcoyotl seems to have believed that beyond all the gods that were worshipped there was something transcendent, the place whence flowers spring, the home of "He-Who-Invents-Himself." Because he was under the hegemony of Tenochtitlan, he had to build a pyramid to Huitzilopochtli. But opposite the pyramid he built another temple, facing it, a tower with different floors representing the different layers of the cosmos. In this temple the shrine room was empty: there was nothing, no god at all. This was in honor of Tloque Nahuaque, "Lord of the Close and Near."

I am intoxicated, I weep, I grieve,
I think, I speak.
Within myself I discover this.
Indeed, I shall never die,
indeed, I shall never disappear.
There where there is no death,
there where death is overcome,
let me go there.
Indeed I shall never disappear.

—Nezahualcoyotl

At can on ayan micohua, "Where-Death-Does-Not-Exist," is also referred to as *Quenonamican:* "Where-In-Someway-One-Exists." Transitoriness was a concern of all the Aztec poets, but especially to Nezahualcoyotl.

Are You real, are You rooted?
Is it only as to come inebriated?
The Giver of Life:
is this true?
Perhaps, as they say it is not true?
May our hearts
be not tormented!
All that is real,
all that is rooted,
they say that it is not real,
it is not rooted.
The Giver of Life
only appears absolute.
May our hearts
be not tormented,
because He is the Giver of Life.

—Nezahualcoyotl

This poem should clarify the poet's conception of *anelhuayo,* "without roots."

The It that Isn't.

Like a monotone, Wasson leaps upon "without roots" as proof that the poets were talking about mushrooms. (Why does he keep *doing* that?)

Rootless is the source of ALL arising, my brother.
Have you not ever eaten of the mushrooms?

But the transitory nature of existence raises a significant poetic dilemma. In a world where everything is rootless, is it possible to point to "It" with a word?

Perchance, oh Giver of Life, do we really speak? . . .
it may be that on earth no one speaks the truth.

—Leon-Portilla, p. 74

Is there perchance any truth to our words here?
All seems so like a dream, only do we rise from sleep,
only on earth do our words remain.

—Leon-Portilla, p. 74

He goes his way singing, offering flowers.
And his words rain down
like jade and quetzal plumes.
Is that what pleases the Giver of Life?
Is that the only truth on earth?

—Tecayehuatzin, tr. by Leon-Portilla

Destined is my heart to vanish
like the ever wilting flowers?
What can my heart do?
At least flowers, at least songs!

—Nezahualcoyotl

Is it possible to speak a true word at all? That is indeed a most important question.

It's like, you have finally reached a door,
you raise your hand to knock
and at that moment the door disappears—
is it possible
to speak anything
true at all?
the hand remains suspended.

(Who SAYS chocolate isn't entheogenic?)

More chocolate!

That the poets drank chocolate is clear. Foamy chocolate. Flowery chocolate. So they could share flowery songs, dream-stirring songs.

> *Zan nixochitlatlaoncoya . . .*
> *noxoxochipoyoncuica.*
> *—Tecayehuatzin*

Some of the poems evoke themes similar to Hindu mythology: the Universe as Vishnu dreaming, or all of existence as Maya.

> *With flowers You paint,*
> *O Giver of Life!*
> *With songs You give color,*
> *with songs You shade*
> *those who will live on the earth.*
> *Later You will destroy eagles and tigers:*
> *we live only in Your painting*
> *here, on the earth . . .*
> *—Nezahualcoyotl*

> *My implanted word is sprouting,*
> *our flowers stand up in the rain.*
> *The cocoa flower gently opens his aroma,*
> *the gentle peyote falls like rain.*
> *My song is heard and flourishes.*
> *My implanted word is sprouting,*
> *our flowers stand up in the rain.*
>
> *—Cantares Mexicanos, tr. Gordon Brotherston and Ed Dorn,*
> *Image of the New World, 1979.*

I want to be fair to Wasson. A number of the poems, especially those from Texcoco and Tlaxcala, contain images so resonate with higher forms of psychedelic experience that it would be extraordinary if such experience were *not* part of the intended metaphor. Leon-Portilla says as much in *Fifteen Poets of the Aztec World* in his notes on the poems of Xayacamach (though without mentioning Wasson).

Nezahualcoyotl's "Song of Spring," more than any of the other poems perhaps, could be read as an invocation of Xochipilli. If such were not the explicit meaning of the poem, we can be sure that a poet of Nezahualcoyotl's stature was not unaware of its implicit significance.

> *Be joyful with the intoxicating flowers,*
> *those which are in our hands.*
> *Now put on*
> *the necklaces of flowers.*
> *Our flowers from the season of rain,*
> *fragrant flowers,*

now open their corollas.
There flies the bird,
he has known the house of God.
Only with our flowers
we are happy.
Only with our songs
does sadness disappear.
O lords, in this way
your sorrow is put to flight.
The Giver of Life invents them,
he has sent them down,
the Inventor of Himself,
the joyous flowers,
with these your sorrow is put to flight.

The ubiquity of "intoxication" in Nahuatl poetry is a clearer pointer to the familiarity of the poets with altered states of consciousness than is "flower."

The flowering chocolate drink is foaming,
the flower of tobacco is passed round.
If my heart would taste them,
my life would become inebriated.
—Tlaltecatzin, p. 240

Is it only as to come inebriated?
—Nezahualcoyotl

The metaphorical equation of flowers (mental flowers, physical flowers, blood flowers, the flowers of desire, the flowers of evanescence, this life, this world, and yes, psychoactive plant flowers, cacao flowers and others—however creative imagination manifests itself) with intoxication may be the pinnacle of Nahuatl philosophy. But it is to this very inebriation that Wasson specifically denies metaphorical meaning. On the poison path that is a fatal blunder.

Depth becomes shallowness.
It suffocates the gods, and they die.
It reifies sobriety.
It relegates playfulness to children.
You point and point, but there is always one
who keeps staring at your finger.

In the presence of Nezahualcoyotl—a major poet who would stand as such in any culture, in any time—Wasson starts talking about "Early Man." He reduces the poet's metaphors to a symbol, which is no metaphor at all.

Is your parochial indignation at this fellow
traveler, whose secure accomplishments surpass any
you might even dream, now quite, quite spent?

Yes. Almost.

(for J. O.)
If we consider a thing of special wonder—
such as a goblet of foaming chocolate
or the true love of a wise woman,
and name the first Jade Skin/Fire Mind,
and name the second Atlantis/Orchid;
though the cup intoxicate us with delight,
and the woman empty us beyond death,
it does not mean
that because "superior entheogens"
may also do these things, that
an Atlantean Orchid is an entheogen.

Yes. Done.

The izqui-xochitli, the cacahua-xochitli,
with eagerness have I longed for them,
empty wisdom had I.
—Nezahualcoyotl

◆

Notes for Wasson section

The Wondrous Mushroom was published in a limited boxed set along with *The Mushroom Velada* and a set of records of Maria Sabina. There was also a trade edition with tapes. The limited edition is actually double boxed: *The Wondrous Mushroom* has its own slipcase within the larger box, and even then the tops of the pages are trimmed and gilded.

Keats may have been correct, so let's dwell on, to paraphrase Charles Olson, "the aesthetics of the thing" (Olson said, as I recall, the "kinetics" of the thing, but no matter). *The Wondrous Mushroom* is quite beautiful, but as a booklover and a former bookbinder, I would call it precious rather than elegant. You don't really need to gild the tops of the pages if you have a slipcase. And the style of the writing matches the binding—it's overwritten. Compare the self-conscious preciousness of *The Wondrous Mushroom* with the much cleaner prose of Wasson's earlier essay on *xochitl* in the Botanical Museum Leaflets.

And there is a question of appropriateness. I'm of the old school that still thinks there should be a connection between form and function. Precious binding should be for timeless words: poetry or established classics, not for scholarship. Scholarship is in flux, it's temporal. Even *Seven Pillars of Wisdom* is a marginal case, forgivable only because Lawrence set the type himself, and because it's autobiographical rather than theoretical. Scholarship, like science, must be tested with review and further inquiry. The binding should reflect that—good covers, good paper, flexible sewing, ample margins, but a working book, not a museum piece with a frame around it.

In his doctoral dissertation, Abraham Caceres argues that the flower/song glyphs were evidence of a "psychodysleptic ASC" (altered state of consciousness). He argues that Wasson is partially correct in identifying Xochipilli as the God of Rapture, but that Wasson ignores that Xochipilli is also the deity of song and dance. In this I agree. He likewise reproves Leon-Portilla for overlooking the musical component of *in xochitl, in cuicatl,* while agreeing with his metaphorical interpretation of the phrase.

Caceres believes that the poets entered a shamanic state through "auditory driving," and suggests that the plant involved was *sinicuichi*, or *Heimia salicifolia.* Unfortunately, he presents very little evidence to back up this assertion, and no bioassay. Caceres attends a mushroom ceremony, thus, I suppose, fulfilling the "field work" requirement for his Ph.D, but it is never clear what relevance the mushroom ceremony, or his data on *ololiuhqui*, has to Nahuatl court poetry. Sadly, such one-dimensional book-scratching all too often typifies what passes for scholarship in humanistic graduate departments.

Black Drink Translations of the idioms by Thomas Christensen.

Translation of the tango song by Robert Tindall.

Kola p. 118:

> *Initiates of Santeria religion chew* obi *as an invigorating devotional sacrament. The fresh nut is frequently accompanied by seven seeds of* atare (Aframomum melegueta)*, one for each of the Seven African Powers, which gives rise to a brisk, illuminating heat encompassing the entire head, acting in synergy with the virtues of the Nut.*
>
> *—Daniel A. Schulke: The Green Mysteries*

Schulke states that there is no substitute for the fresh nut.

Ma Huang p. 131: I am rather suspicious of the identification of the *Ephedra* pollen found in the Shanidar burial at species level. Today *Ephedra altissima* grows in more southern latitudes. *E. altissima* does contain ephedrine. Flattery (2000) states that the *Ephedra* species in the area of the Shanidar site do not contain ephedrine. However, 60,000 years gives plants plenty of time to move around.

Support for *Ephedra* as soma is found in Mahdihassan (1963, 1981, 1982, 1983, 1987, 1989), Falk (1989), Nyberg (1997), Parpola (1997), and Qazilbash (1960). S. Mahdihassan published his first article, on the lac insect, in 1918. He continued publishing a dozen or more articles every year, in English, German, and French, through 1991, when, I can only surmise, he died at the age of ninety-eight. His interests covered biology, chemistry, botany, languages, soma, and the history of alchemy, especially Chinese, Indian, and pre-Alexandrian alchemy. One of his alchemical articles lists a number of alchemical terms in Chinese, Sanskrit, and Greek. Much of his evidence of the soma/*Ephedra* equation is important, such as citing verses in the *RgVeda* and the *Avesta* that the soma plant was much-branched, was like a bundle of arrows, was as tall as a man, and citing the continued use of *Ephedra* as a ceremonial Elixir. His assertion that soma is a Chinese loan word derived from *huo ma,* "fire hemp," is not tenable, as (David Flattery pointed out to me) the Indic/Iranian phonological shift s→h was unidirectional. Steve Aldridge (in personal communication) has also suggested a Chinese origin of the word soma, but through *su ma,* as "invigorating plant."

蘇麻

su ma

The characters today refer to soda. Perhaps. But the easiest explanation is the one generally accepted by scholars, that soma is derived from the Proto-Indo-Iranian root **sau-* "to crush or grind with a pestle in a mortar." Mahdihassan notes that the Sanskrit *kship,* mentioned in RV.9.79.4, means "jointed, like a finger."

Mahdihassan believes that *Ephedra* was the drink of longevity in ancient Indian alchemy, before this function was filled by mineral drugs such as cinnabar through contact with the Chinese. If Mahdihassan's identification of *Ephedra* as soma is correct, verses in the *RgVeda* extolling soma as the drink of immortality are understandable from an alchemical context. Whether or not the idea of the Elixir entered China through the Tarim Basin and Dunhuang, belief in such an elixir was common among Taoists by the fourth century BCE. Plant-mineral mixtures, such as colloidal gold, became favored over purely vegetable drugs, and later were replaced by all-mineral drugs such as cinnabar (which, as Mahdihassan points outs, is the color of the soul: blood-red). The colloidal gold, *Chim-I,* followed the Silk Road into the Near East where it became *alchemy,* and thence west to Alexandria.

Falk states that the Labasūkta verse (RV 10.119), where a winged creature, after consuming soma, touches the earth and sky with its wings, does not imply that soma has hallucinogenic effects on human drinkers. He puts more importance on the verses where soma prevents sleep, is an "alerting drink," invigorating, etc. *Ephedra* fits the common Vedic (also Avestan) reference to *amśu* "plant-fibers, stalks," and also the color terms *hari/zairi,* which he glosses as "yellowish green to green." Falk notes that both soma and *Ephedra* are characterized by nodes; that *Ephedra* grows in the mountains; that the taste of *Ephedra* is *tīvrá,* "sharp"; that *Ephedra* is "of good scent," as is haoma in the *Yasna* (10.4); and that *Ephedra* has the aphrodisiacal properties associated with soma/haoma.

Nyberg summarizes botanical evidence for several soma/haoma candidates and concludes that *Ephedra* best meets the textual and pharmacological requirements. He was, however, unable to replicate the Russian finding of *Ephedra* pollen in the samples he received from Togoluk 21 of the BMAC (Bactria-

Margiana archaeological complex), stating that the samples showed signs of deterioration. Nyberg leaves open the possibility that soma/haoma may have been pressed from more than one plant, which, according to Flattery, is simply a statement of the fact.

Parpola attempts to integrate archaeological and linguistic evidence to create a possible scenario for the origins and spread of the soma/haoma ritual. Parpola concludes that the soma cult was introduced to Bactria and Margiana by the Vedic conquerors of the *Dāsas,* whom he connects with the BMAC temple-fort of Dashly-3, and proposes that the use of *Ephedra* came from the Andronovo culture, perhaps from as far east as the Tien Shan (and the Tarim Basin). He notes that the early Andronovo culture was highly stratified. The Andronovo, near the southern Urals, were the first chariot culture, and were metallurgists, producing weapons of many kinds. Parpola cites parallels between the BMAC, Mycenae, the Proto-Indo-Aryan Mitanni empire in Syria, and goddess-worship in eastern India. Interesting stuff, all, and the unraveling of the story will undoubtedly continue.

Erdosy investigates various modes of language change in northern India, and uses examples from other cultures. He makes the point that cultures have a kind of *shape*—a particular way a given culture relates with outsiders. Some cultures cannot accept outsiders within their fold, but themselves are able to assimilate into another culture easily. The genius of the Indo-Aryans was their ability to incorporate a wide variety of other cultures within their own framework *without dishonor to the newcomers.* Their stratified, khanate-based society was a perfect fit for the Harrapan culture that was already in a process of localization. The presence of Dravidian retroflex phonemes in Old Indic is evidence of a period of extensive bilingualism. More, it means that it was the people who spoke Indic as a second language, pronouncing it with their native retroflex phonemes, who were the primary dispersers of the language. That is, more children learned Indic as a first language from those who spoke it as a second language than from native speakers. India is a case of absorption more than assimilation.

In the case of the Mitannis, it seems that a small number of ruling elites were able to take charge of the established Hurrian civilization around 1500 to 1200 BCE. That the Mitannis were Indo-Aryan, rather than Indo-Iranian, is shown by the presence of Mitra, Varuna, and Indra. A Mitannian named Kikkuli wrote a book on horse training for the Hittites.

p. 141: I originally had a rant here about the cost/benefits of so-called "risk" protection, and used airport security as my example—what is the cost of all the time spent waiting in airports—all of the millions and millions of extra hours wasted when there is no "clear and present danger"? Since, after the World Trade Center catastrophe, the danger is indeed clear and present, I took the paragraph out. On the other hand, though, what good did all of that extra "security" do us?

In 1994 the DEA eliminated the "threshold" for reporting sales of ephedrine. United States companies must now obtain identification ("two forms of identification—and we will only ship to the address on your driver's license") from customers wishing to purchase any quantity of ephedrine. The Methamphetamine Control Act of 1996 established fines of up to $250,000 for any company that sells a chemical or piece of apparatus (such as a three-necked flask) to a person who uses them to manufacture "or attempt to manufacture" a controlled substance. Iodine has been added to the list of precursor chemicals.

An internet site for a law firm has the headline "Ephedra use has been linked to stroke and heart attack," and invites anyone who has had adverse effects to ma huang to contact their personal injury lawyers. The FDA states that since 1994, ephedra may be involved in forty deaths, all seemingly related to high blood pressure.

Khat

Torsten Wiedemann (2002) has brought to my attention that the degradation of cathinone into cathine may have nothing to do with enzymes, but may be a result of keto-enol tautamerization. Briefly, the proton on the alpha carbon migrates to the beta carbon, forming a hydroxyl group and a double bond between the two carbons. These two forms exist in equilibrium. While the ketone is the more stable, the presence of a base (and water and heat) shifts the equilibrium to the enol form, thus explaining why early acid-base extractions failed to recover any cathinone.

Further complicating the picture, Alexander Shulgin (2002) points out that the regeneration of the ketone would be racemate, since the double-bonded enol would not be optically active. Shulgin also notes that amino groups attached to a methylene carbon can be very reactive, depending of basicity, temperature, and environment. Shulgin dryly wonders how the compound can exist at all in the plant, and suggests as an answer to his own question that the base forms a salt-like interaction with native acids in the plant. For, despite all the above, cathinone most certainly does exist in the plant, accounting, in fact, for more than two-thirds of the total phenylalkylamines, and all in the (-) form.

p. 147: *The Observer* (Sept. 9, 2001), in an article titled "Children's drug is more powerful than cocaine," reported Brookhaven National Laboratory findings through brain imaging research that Ritalin, taken by more than four million children in the United States, is more powerful at blocking dopamine transporters than is cocaine. A normal dose of Ritalin given to children blocks 70 per cent of the dopamine transporters, leaving a surfeit of dopamine, whereas cocaine only blocks around 50% of the transporters.

Amphetamine

p. 153: Proving that the demonization of the "reefer madness" of the 1930s is alive and well, the *Los Angeles Times* (May 7, 2001) carried a front page article headlined "Meth Lab Upsurge Fuels Child Abuse." The article led off: "There was the baby left in the trash bag. The little girl raped after her first birthday. And the tortured 7-month-old, her tiny face pocked by cockroach and rat bites and her body riddled with bedsores so infected that doctors had to remove part of her leg. All the incidents happened in the desert. All the parents used meth."

Huh? I hope that readers will not consider my doubts to be unpatriotic. The point of the article was to push a new bill which would enable authorities to take away the children of parents who used methamphetamine. A Sheriff's Department Sgt. was quoted as saying: "We used to call an uncle, aunt, grandpa or friend to collect the child. What we found, though, is that they were continuing to be a victim. All we'd done was put them back in a worse situation than they were already in."

Huh?

Coca p. 173: Coca wars. Since September 11, 2001, it no longer seems necessary to label counterinsurgency as "fighting drugs." In fact, government propaganda is trying to make the war on drugs, the war on terrorism, and counterinsurgency all synonymous. President Bush has now labeled the Taliban regime as "drug traffickers," despite the fact that the Taliban had ruthlessly suppressed the growing of opium poppies. The Bush administration, in fact, had rewarded the Taliban for their success with a gift of $43 million dollars just four months before 9/11. It is interesting to note that all the large poppy fields in the country were controlled by the Northern Alliance.

GET HOT
-keep moving
DON'T WASTE
A PRECIOUS
MINUTE

I can't help quoting from Robert Scheer's column (*Los Angeles Times*, May 22, 2001) titled "Bush's Faustian Deal with the Taliban":

> *Enslave your girls and women, harbor anti-U.S. terrorists, destroy every vestige of civilization in your homeland, and the Bush administration will embrace you. All that matters is that you line up as an ally in the drug war, the only international cause that this nation still takes seriously.*
>
> *That's the message sent with the recent gift of $43 million to the Taliban rulers of Afghanistan, the most virulent anti-American violators of human rights in the world today. The gift, announced last Thursday by Secretary of State Colin Powell, in addition to other recent aid, makes the U.S. the main sponsor of the Taliban and rewards that "rogue regime" for declaring that opium growing is against the will of God . . .*

Scheer prophetically concludes:

> *The Taliban may suddenly be the dream regime of our own drug war zealots, but in the end this alliance will prove a costly failure. Our long sad history of signing up dictators in the war on drugs demonstrates the futility of building a foreign policy on a domestic obsession.*

p. 158: *"The psychic effect . . ."* compare with warnings on page 139 in *P/Poeia*.

p. 169: Thanks to Robin Atwood for the Pryor quote.

Wandering Drawings, pictographic renderings, and the painting on p. 191 by the author.

MDMA

p. 204: Related substances: a new empathogen of promise is methylone (3,4-methylenedioxy-methcathinone). Methylone is methcathinone with the distinctive MDMA methylenedioxy ring. It carries a stimulating euphoria, along with much of the empathogenic heart opening of MDMA, without, in some people's experience, melting one into a vibrating slug of love in the mush pile. There is a long stimulant tail, and a beautiful next day.

p. 207: Regarding protection against axonal degeneration by fluoxetine (Prozac): the use of l-deprenyl, a monoamine oxidase-B inhibitor, also significantly reduced 5-HT terminal damage in rats (Sprague and Nichols, 1995). The authors of the paper suggest that deamination of excessive dopamine within the 5-HT terminal generates hydrogen peroxide, which may be responsible for the damaging oxidative results from MDMA.

The hypertensive crisis that could possibly (and sometimes does) occur after combining an MAO-I such as harmine with MDMA can be effectively treated with phentolamine. Dr. Alan Cohn suggests that those experimenting in this dangerous area carry nifedepine (Procardia) in case of an emergency. Thorazine will help in a pinch.

p. 208: Several million ecstasy users, with much more experience than myself, will find my cautions to be overstated.

p. 210: MDMA researcher Dr. James O'Callaghan (Spartos, 2001) points out that MDMA and Adderall (a prescription amphetamine given daily, or twice daily, to millions of children in the United States) carry similar risks.

p. 216: Almost every drug can cause fatal reactions in certain people. It is known, for example, that people with a deficiency of the liver enzyme P450 2D6 can be excessively and dangerously sensitive to MDMA.

"Sell a glowstick, go to prison," (Brown, 2001). DEA agents in New Orleans arrested club owners, citing the presence of glowsticks and pacifiers as evidence of drug trafficking. The American Civil Liberties Union fought the case and won. Again, public health is clearly not the issue here.

The National Drug Intelligence Center, an arm of the Department of Justice, is pursuing a strategy to monitor and infiltrate music, dance, and drug information web sites. The report states that their target should be five types of individuals who disseminate information on the web: drug offenders, drug-culture advocates, advocates of an expanded freedom of expression, anarchists ("the presence of these individuals on the Internet is a known fact"), and "other lawbreakers."

It is sometimes difficult, given such outrageous behavior by government officials, to maintain what the Dalai Lama calls "loving compassion." Like all of us, these beings also swim in ignorance, and surely many of them believe they are doing good work.

On the science front, researchers at Cambridge University found that they were able to kill 238 mice with a combination of methamphetamine and loud music.

Say . . . what?

GHB

p. 221: Cases of GHB habituation and dependence have become more common in the first two years of the new century. Karen Miotto and Brett Roth (2001), two physicians who have treated GHB withdrawal, characterize the syndrome as being similar to alcohol withdrawal (delirium tremens) and benzodiazepine withdrawal (long duration of symptoms). This is not surprising as all three of the drugs cause down-regulation of inhibitory GABA receptors. The syndrome appears to be manifested in patients who have self-administered GHB on a round-the-clock basis (every 2-3 hours) for several to many months. Treatment often requires high dosages of sedative-hypnotics and physical restraints. (On the other hand, many have quit on their own, either by tapering or by going cold turkey.)

But it doesn't sound like fun. Symptoms begin very quickly, including anxiety, insomnia, tremor, and episodes of tachycardia, and can move on to uncontrolled delirium. These symptoms can last for a week or more, and episodically for even longer. Malaise and that "not quite right" feeling can last for months.

The Miotto-Roth paper is available online at www.erowid.org.

Dream Stutters

p. 231:

Altogether too strident and provocative.
Your grandstanding is shameless.
Where's your compassion, where's your insight?

Birds chirp, and it's morning.

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COFFEE

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II. ILLUSTRATIONS

We have attempted, again, to designate artist's or owner's "official" titles by quotation marks, while titles assigned by others are indicated by initial capitals with no quotation marks. Page references are provided in parentheses following titles.

◆

Preliminaries The repeating decorative border is a frontispiece printed by Philippe Pigouchet, Paris, 1498. Title page illustration (iii) designed by Tom Christensen and Jeremy Bigalke; "Creation of the World" (vi), Hieronymus Bosch, c.1500; tree face (viii), source unknown; "The Ancient of Days" (3) by William Blake, metal relief etching, 1794; Hesiod guided by his muse (4), engraving for the *Theogony* by Georges Braque, c. 1932; angel woodblock (6) by Thomas Christensen; "The Nightmare" (8) by John Henry Fuseli, 1785–1790; clock image (11) is from *Britten's Old Clocks and Watches and their Makers,* seventh ed. edited by G.H. Baillie, F.B.H.I., C. Clutton, F.S.A., & C.A. Ilbert, F.B.H.I. 1956, Bonanza Books; "The Four Horsemen of the Apocalypse" (12), Albrecht Dürer, 1498; "The Clockmaker" (14), Jost Amman, 1568.

Coffee Coffee plant (15) from Strässle's *Naturgeschichte,* Stuttgart, 1885 (in Ernst and Johanna Lehner: *Folklore and Odysseys of Food and Medicinal Plants,* 1962); Clearing photograph (19) by Eadweard Muybridge, Guatemala, 1875; calligraphic leaf (20), 19th century, Turkey, gold on tobacco leaf, source unknown; Maxwell House newspaper advertisement (22), 1933; coffee beans (22) photograph by Thomas Christensen; *Slave Market with the Disappearing Bust of Voltaire* (23) by Salvador Dalí, oil on canvas, 1940; first Parisian coffee stall (24) from a French engraving, 1672; Coffeehouse (27) by George Grosz, photolithograph, 1918–1919; *Fur-Covered Cup, Saucer, and Spoon* (29), Meret Oppenheim, mixed media, 1936; Nineteenth-century coffee grinder (31); Coffee House in Colonial America (32), engraving by Alfred Bobbett; poster for opening of Café Voltaire (34) by Marcel Slodki, Zurich, 1916; *Rousseau in Armenian dress* (35) by Allan Ramsay, oil on canvas, 1766; cover illustration from Spanish-language edition of Miguel Angel Asurias, *Hombres de Maiz* (37); cover of early City Lights edition of *Howl,* this edition late 1950s–early 1960s (39); coffee (40) from Franz Eugen Köhler, *Medizinal-Pflanzen in naturgetreuen Abbildungen mit kurz erläuterndem,* 1887; "Honoré de Balzac" (42) by Ralph Barton, 1928.

Tea Tea Plant (45) from Strässle's *Naturgeschichte,* Stuttgart, 1885; transporting bales of tea by sampan (46) from Massachusetts Horticultural Socitey, in Derek Maitland: *5000 Years of Tea,* 1982, Gallery Books; tea leaf decoration (47), Ironstone pottery tea leaf decoration, England, 19th century (by mid-century more than a dozen English factories were making this pattern, and by the 1870s, it had spread to many other countries); Thomas De Quincey (48), 1840, source unknown; Hakuin, Daruma (Bodhidharma) (49), Japan, 18th century (Hakuin painted many Daruma portraits); tea vendors (50) "CFW Publications," in Maitland, as above; tea labor (51) source unknown; pages from Chinese edition of Lu Yu's Ch'a Ching (The Classic of Tea) (52), first published c. 780 AD; Ch'ing dynasty teapot, China (54); image (57) from Chanoyu kaiga shiryo shusei ("Compilation of Materials on the Tea Ceremony," a Japanese-language anthology); woman drinking tea (58) Japanese print; image (59) from Chanoyu kaiga shiryo shusei ("Compilation of Materials on the Tea Ceremony," a Japanese-language anthology); design for transom (ramma) of the Sangetsu-tei Tea Hut at Omotesenke, Kyoto, Japan (60), by Sen Rikyu (1522–1591); image (61) from Chanoyu kaiga shiryo shusei ("Compilation of Materials on the Tea Ceremony," a Japanese-language anthology); the Clipper Cutty Sark (62), oil painting, Museum of America and the Sea, Mystic Seaport, Connecticut; Tarot card (63) from Arthur Edward Waite, *A Pictorial Key to the Tarot* (1910); tea harvest (65), source unknown; *The Cup of Tea (Portrait of Lydia)* (66), Mary Cassatt, 1879, oil on canvas, Metropolitan Museum of Art, New York; A Mad Tea Party (68) by Blanche McManus, A. Wessels, New York, 1900; another mad tea party (69) by Harry Rountree, William Collins, London, 1928; tea box from occupied Japan (71), source unknown.

Chocolate Cacao Plant (73) from Strässle's *Naturgeschichte,* Stuttgart, 1885; Were-jaguar ceremonial axe (75). Olmec culture, c. 1000 BC, British Museum; Classic and post-classic Maya Cacao glyphs (77); two *ak k'u huns* ("keepers of the holy books") (78), depicted on an eighth-century Maya vase from the Peten region of

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Ephedra Mahuang woodcut (127) from Read, Bernard E., *Chinese Medicinal Plants, Ephedra; Flora Sinensis C, XXIV. I.,* 1929, Peking Union Medical College (translation of Tu Shu Chi Ch'eng); *Une Semaine de Bonté* (130), detail from sketch by Max Ernst, 1934; Togolok (131) from Sarianidi, V., 1992, Drevnii Merv, Moscow, KPYK; vase (133), source unknown; Ephedra Trail map (136) by Dale Pendell, after Barber (Barber, Elizabeth Wayland. 1999. *The Mummies of Ürümchi.* Norton); chariot tarot image (137) by Michael Goepferd and Brian Williams: *The Light and Shadow Tarot,* Destiny Books, Rochester Vermont, 1997; Terracotta figurines (138) by P'yankove, L. "Central Asia in the Bronze Age: sedentary and nomadic cultures," *Antiquity* 68:355-72. Figures are from Southern Turkmenia (left to right): Altyn depe (Developed Bronze Age), Kara depe (Late Eneolithic); BMAC seals and amulets (139 and 140) from P'yankove, L., as above.

Khat Khat bundle (143) is a bundle ("marduuf") of khat in the typical form sold on the market: tightly wrapped in banana leaves, from Elmi, Abdullahi S. 1983, "The Chewing of Khat in Somalia," *Journal of Ethnopharmacology,* 8:163-176; Khat bundles photograph (147) shows the contents of a "marduuf" of khat (ten smaller bundles), from Elmi, as above.

Amphetamine Defend freedom image (150) is a U.S. Government Propaganda Poster, World War II era; worry sketch (151), by Jeremy Bigalke; more production image (153) is a U.S. Government Propoganda Poster, World War II era; untitled image (155) by Donn P. Crane, illustration for *My Bookhouse* series Volume 3 (ed. Miller, Bookhouse for Children Publishers, Chicago, 1920).

Coca Erythroxylon coca (156), source unknown; untitled image (158) by Donn P. Crane, illustration for *My Bookhouse* series Volume 3 (ed. Miller, Bookhouse for Children Publishers, Chicago, 1920). Illustration for "The Fisherman Who Caught the Sun," a Hawaiian Legend; Coke boy (161), detail from Coca-Cola advertisement; Indian carguero image (162) from John Potter Hamilton, *Travels through the Interior Provinces of Colombia,* 1928: "View of the pass from Quindio, in the province of Popayan and cargueros (or carriers) who travel it." Reprinted in Taussig, Michael T. "Shamanism, Colonialism, and the Wild Man: A Study in Terror and Healing," University of Chicago Press, 1987; Sigmund Freud (165), source unknown; Shackleton (167), source unknown; Maya god (170) from *The Ancient Maya,* 3rd Edition (Morley & Brainerd, 1956). Pictured is Buluc Chabtan, a Mayan war and human-sacrifice deity; design for front cover of *The Yellow Book Volume 1* (171), Aubrey Beardsley, April 1894. Printed in black on yellow cloth boards. Private collection; CIA Sabotage Manual images (172): in the early 80s the CIA published a sabotage manual and distributed it throughout Nicaragua. The anti-Sandanista pamphlet is full of tips on bringing down the infrastructure of the country. Title page text: "Practical guide to liberating Nicaragua from oppression and misery by paralyzing the military-industrial complex of the traitorous Marxist state without having to use special tools and with minimal risk for the combatant." These images are provided by Weed at smog.net; New York Society for the Suppression of Vice image (174), c. 1870, is explained at drugwar.com/propoganda.shtm; wisdom eye (176) from symbols.com, redrawn by Jeremy Bigalke: a sign called the eye of the medicine man, synonymous with *wisdom* and *awareness* for some Indian tribes in the south western USA.

Stealing from Tomorrow Crackpipe sketches (180) by Dale Pendell; "Death and the Gentleman" (181) from *Der Doten Dantz* (Dance of the Dead), printed by Heinrich Knoblochzer, Heidelberg, 1490; reprinted in Ernst and Johanna Lehner: *Devils, Demons, Death and Damnation,* Dover, 1971; "The Conqueror Worm" (182) by Frantisek Kupka, c. 1900. Based on poem "The Conqueror Worm" by Edgar Allan Poe. Bibliothèque Nationale, Paris, France; Purification symbol (183), drawn by Jeremy Bigalke; "The Fall of the Magician" (detail) (183) by Peter Bruegel the Elder, 1564.

Wandering Marginal sketches (throughout) by Dale Pendell; shaman image (185) is a wooden sculpture of a long-haired shaman, attributed to the Caddo, an agricultural people that once inhabited portions of Texas, Arkansas, and Louisiana in the extreme southeastern Plains. 6½" high. Eighteenth century. Smithsonian Institution. Permission requested from Rizzoli International Publications; woodcut print (184) from The Eclogues of Vergil by Aristide Maillol, c. 1926 (from: *P. Vergili Maronis Ecolgae & Georgica latine et germanice / volumen prius Ecolgae // Vergilius Maros Eclogen und Georgica in der Ursprache & deutsch / Band I: Die Eclogen // Vergili Eclogae: recognoverunt Thomas Achelis et Alfred Koerte / ornaverunt A. Maillol et E. Gill / impressit Harry Comes de Kessler in aedibus suis Cranach Presse Vimariae anno MCMXXVI // Die Eclogen Vergils in der Ursprache und deutsch übersetzt von Rudolf Alexander Schroeder: mit Illustrationen gezeichnet und geschnitten von Aristide Maillol),* also reprinted in Dover Publications, New York, 1979; polar bear handle image (187) is an ivory dog-sled handle in the form of polar bear cub, carved by Bering Sea Eskimo, 1870–80. Peabody Museum of Natural History, Yale University. Permission requested from Rizzoli International Publications; "The Revelation of St. John" (*Die Heimlich offenbarung iohnis*) (detail) (189) by Albrecht Dürer, printed 1498: "The Angel with the Key hurls the dragon into the abyss . . ." (Rev. XX, 1–3; XXI, 9–12; XXII, 8); landscape (190) by M.C. Escher, 1921, permission requested from Cordon Art, Netherlands; Sumi painting (191) by Dale Pendell.

Cleansing the Temple Serpents image (196) from Hammer Purgstall: *Mémoire sur deux coffrets gnostiques.* In *Psychology and Alchemy* Jung called this drawing "Pagan rites of transformation in the Middle Ages, with serpents." Huh? It's SO typical of Jungians to call a Hebrew story "pagan." And "transformation"? Gimmeabreak; Holy family image (197) is Shiva, Parvati, and their children on Mount Kailasa. Drawing from the Punjab Hills, Kangra style, c.1800. Permission requested from Harvard University Press; gnostic serpents (198) sketch by Dale Pendell; Kali image (198) commercial print; Camels in the Sahara (199) from a woodblock print by Jeremy Bigalke.

Nutmeg Nutmeg (200) from Mattioli's Commentaries, *Lyons,* 1579; nutmeg traders in the Banda Islands (202), c. 1599, source unknown (local merchants added grit to their spices to increase the weight and swell their profits. "Have you a great care to receive such nutmegs as be good," Lancaster warned his merchants, "for the smallest nutmegs be worth nothing at home"); the Banda Islands (203), source unknown. Run Island, marked Pulorin, is on the extreme left; nutmeg tree (204), artist unknown.

MDMA MDMA formulae (207) from Erowid, 1999; snake goddess image (208) is *Asavari Ragini,* Bundi, c.1790 (detail), opaque watercolor, gold, and ink on paper. A woman in the communing with cobras. Permission requested from the Los Angeles County Museum of Art; "The Physician's Tale of a Young Man Loved By Two Sisters" (209): illustration by Kay Nielsen for the Arabian Nights tale, private collection; fumando (211) sketch by Jeremy Bigalke; untitled woodcut print (212) from The Eclogues of Vergil by Aristide Maillol, c.1926, as above; "Group Kiss" (214), Crane, is an illustration for the story "The Swineherd" by Hans

Christian Anderson; “Hermes Bird” (216) from *Theatrum chemicum Britannicum* (1652): the *prima materia* as the dragon, being fertilized by the Holy Ghost; skulls (216) and trident (217) by Robert Beer: *The Encyclopedia of Tibetan Symbols and Motifs,* Shambhala, 1999; “The Scapegoat” (218) M.C. Escher, woodcut, 1921. Premission requested from Cordon Art, Netherlands. Krishna subduing Kaliya (219), image from Northern India, perhaps Benares. 19th century. Permission requested from Harvard University Press.

GHB “The Land of Cockaigne” (detail) (222) by Peter Bruegel the Elder, 1567; “The Lake, the Sleeping Water” (224) by Leon Frédéric, 1898. This painting is the right hand panel of the triptych “The Stream.” Musées Royaux des Beaux-Arts de Belgique, Brussels, Belgium.

The Gift Revelation sketch and critic watercolor (227) by Jeremy Bigalke.

Dream Stutters Quijote and Sancho (229) by Gustavo Doré for *El Ingenioso Hidalgo Don Quijote de la Mancha,* by Miguel de Cervantes; “the return” (231) originally appeared in 1882 in *Grimm’s Fairy Tales* translated by Lucy Crane and illustrated by Walter Crane.

References “At the Edge of the Forest” (232) by Gustave Doré for Dante’s Divine Comedy, 1857. Text accompanying: “Midway upon the journey of our life / I found myself within a forest dark, / For the straightforward pathway had been lost.” (*Inf.* I, 1–3); Indian tea ship shadow image (235), source unknown; Tlingit shaman’s rattle (237), c.1800. Private Collection. Permission requested from Rizzoli International Publications; Tibetan symbol for the *origins of the universe* (239), redrawn by Jeremy Bigalke, shows a seed of the universe rotating clockwise in the spiral of potential energy; Amphetamine warning symbol (251) redrawn by Jeremy Bigalke; “Don’t waste a minute” image (252) is a U.S. Government Propaganda Poster, World War II era; untitled watercolor (254), detail, by Neil G. Greene, 1998; “Vision of Faust” (266) by Luis Ricardo Falero, painted in 1878. Also known as “The Departure of the Witches.” Faust’s reaction to these figures with tiny eyes, sharp claws and slimy hands is one of disorientation asking “Are these the ones who lost themselves, believing Satan’s Lies?”; untitled fairy illustration (267) by Donn P. Crane, for *My Bookhouse* series Volume 2 (ed. Miller, Bookhouse for Children Publishers, Chicago, 1920).

III. TEXT CREDITS

Revolutionary Letter #5, in *Revolutionary Letters,* Diane Di Prima, 1971, City Lights, used by permission. The chapter on Catha edulis was first published in Entheogen Review. Parts of the coffee chapter appeared in Whole Earth.

“Hecate’s Garden” and parts of the MDMA chapter were performed at the Mind States conference in Berkeley in 2001 with the Oracular Madness Choir.

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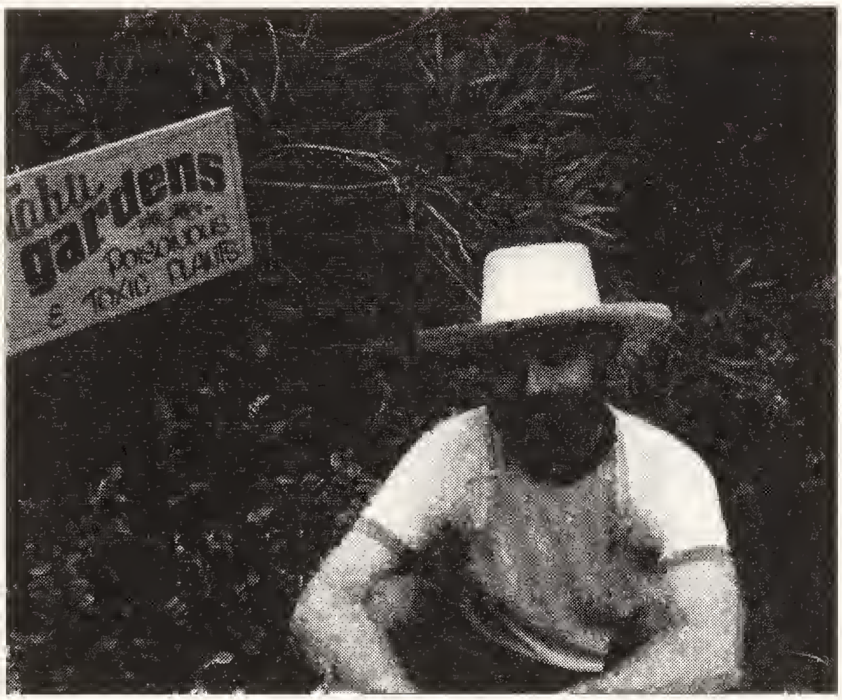
ABOUT THE AUTHOR



Dale Pendell's most recent day job elevated his title from "software engineer" to "computer scientist." However, he is better known as an ethnobotanist and as the author of *Pharmako/Poeia: Plant Powers, Poisons, and Herbcraft* and seven books of poetry, beginning with *The Gold Dust Wilderness* in 1971. He was the founding editor of KUKSU: Journal of Backcountry Writing, and edits the Exiled-in-America chapbook series. His poems and translations have appeared in numerous journals and anthologies, including *Sulfur, Beneath A Single Moon: Buddhism in Contemporary American Poetry,* and *Dimensions of a Life,* a book about the life and work of Gary Snyder.

His "Plant Spirit Suite," a musical invocation of shamanic allies, performed with the Oracular Madness Ensemble, has won critical acclaim.

When not sitting at the computer writing about the Poison Path, he can be found creating alchemical potions, salves, and elixirs, the most famous of which is his herbal wormwood mouthwash.

Dale Pendell supports the Green Ribbon campaign to free the green prisoners. DIY.

Plant student Dale Pendell established himself as one of the foremost popular exponents of shamanic ethnobotany with his unprecedented *Pharmako* trilogy. A noted poet, he was the founding editor of the avant-garde magazine *Kuksu* and a co-founder of the Primitive Arts Institute and has led workshops on ethnobotany and ethnopoetics for the Naropa Institute and the Omega Institute. Pendell was part of the Oracular Madness theme camp at Burning Man for a number of years (his book *Inspired Madness: The Gifts of Burning Man* was published by Frog Books in 2006). Also an experienced computer scientist, he lives with his wife Laura in California's Sierra foothills.

PSYCHOTROPIC PLANTS,
DRUGS/ETHNOBOTANY

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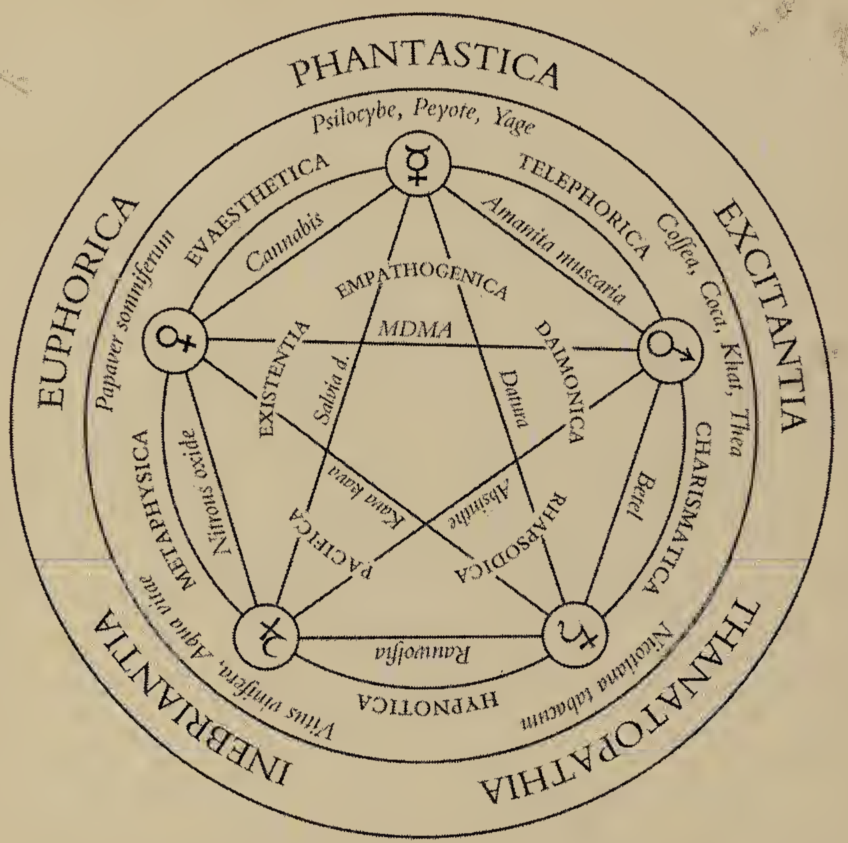
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Papaver somniferum
Coffea, Coca, Khat, Thea
EMPATHOGENICA
MDMA
EXISTENTIA
Salvia d.
DAIMONICA
Datura
METAPHYSICA
Nitrous oxide
CHARISMATICA
Betel
PACIFICA
Kava kava
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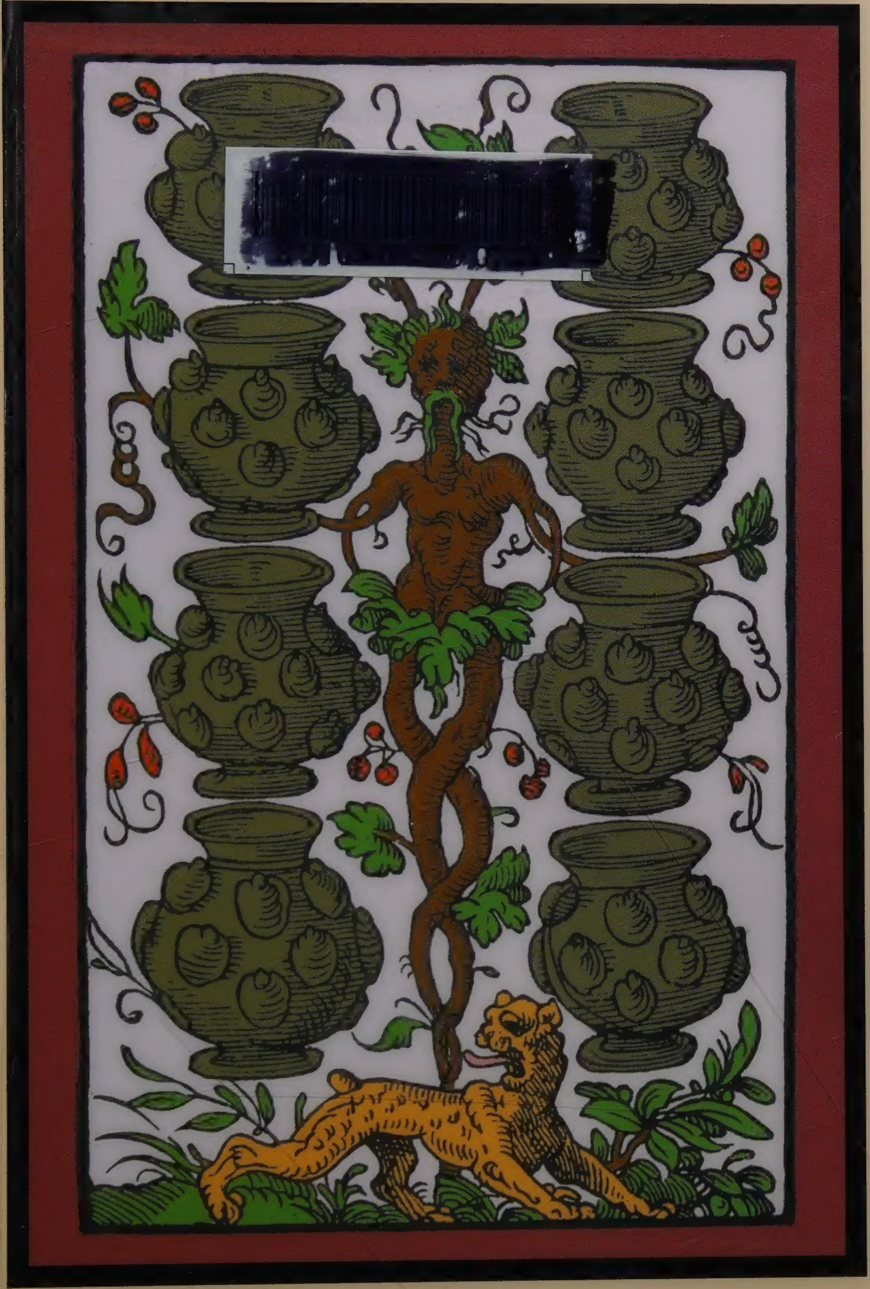

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PHARMAKO GNOSIS

PLANT TEACHERS
AND THE
POISON PATH

BY DALE PENDELL

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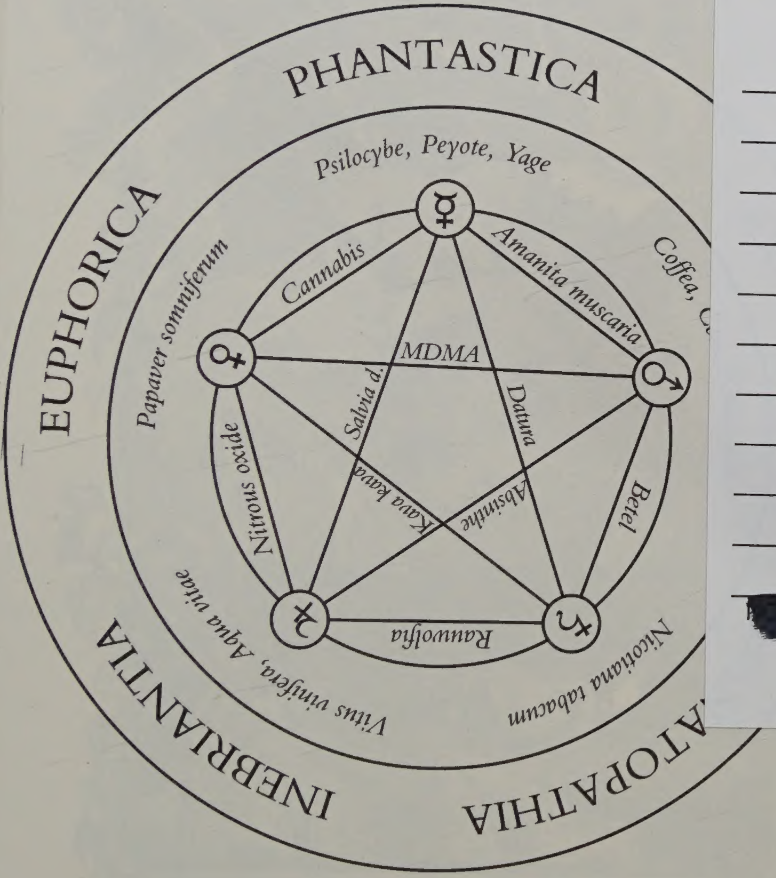
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PHARMAKO GNOSIS

PLANT TEACHERS AND THE POISON PATH

by DALE PENDELL

MERCURY HOUSE :: SAN FRANCISCO

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For my traveling companions

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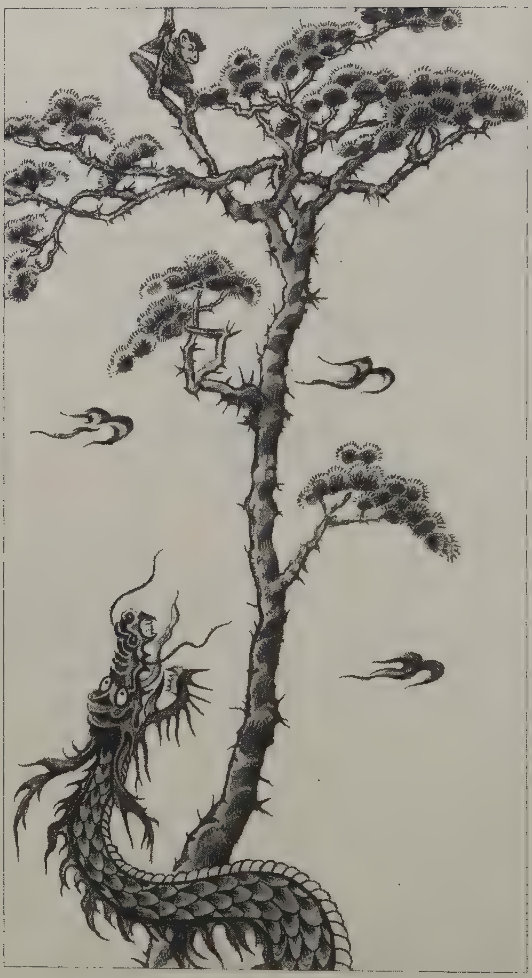


WELCOMING A DEMON, 13TH C.

PREFACE

> *Green Gnosis is the luminous stream of mystical understanding proceeding from plant spirits and the Greenwood, as accessed by the Wortcunner via the Art Magical. Also called phytognosis, it is the process whereby the Angels Arboreal bequeath wisdom unto man. Plant Folklore is the encryption and transmission, in common parlance, of localised Green Gnosis in accordance with the mastery and cunning of its steward generation.*
>
> *—Daniel A. Schulke, Magister and Verdelet, Cultus Sabbati*

By luck, a man I had met offered me a cabin in the mountains. I spent several weeks building the shelves I needed for my books. With the help of a friend, I moved in. I had a basic kitchen, water from a spring, and I set up a corner of the room as a meditation alcove.

Friends gave me all manner of research materials. A chemist offered occasional use of a laboratory. A psychiatrist promised to stand by if I went too utterly over the edge.

I was a little cocky, though, and even put a sign over the door that said DEMONS WELCOME HERE. As it turned out, the demons already knew the address.

Goddesses appeared with encouragement and counsel, and left bits of magic. I gathered acorns and leached them. Woodpeckers were hammering the house apart. A heron would wade in the pond, and the coyotes moved in close.

I dreamt a lot, but after awhile the dreams and the visioning and the waking all got mixed together and it seemed that everything that happened had a hidden meaning, and that my thoughts were affecting every part of the flow of significance. I found myself relying on simple superstitions—hanging yarrow above the steps, making little talismans and love medicines and burying them in the cardinal corners. I tried to maintain some regularity, like cooking and setting a table, but sometimes I'd get lost and things like eating or bathing would just seem like too much trouble.

The place was called "Buzzard Peak."

Dear Doctor,

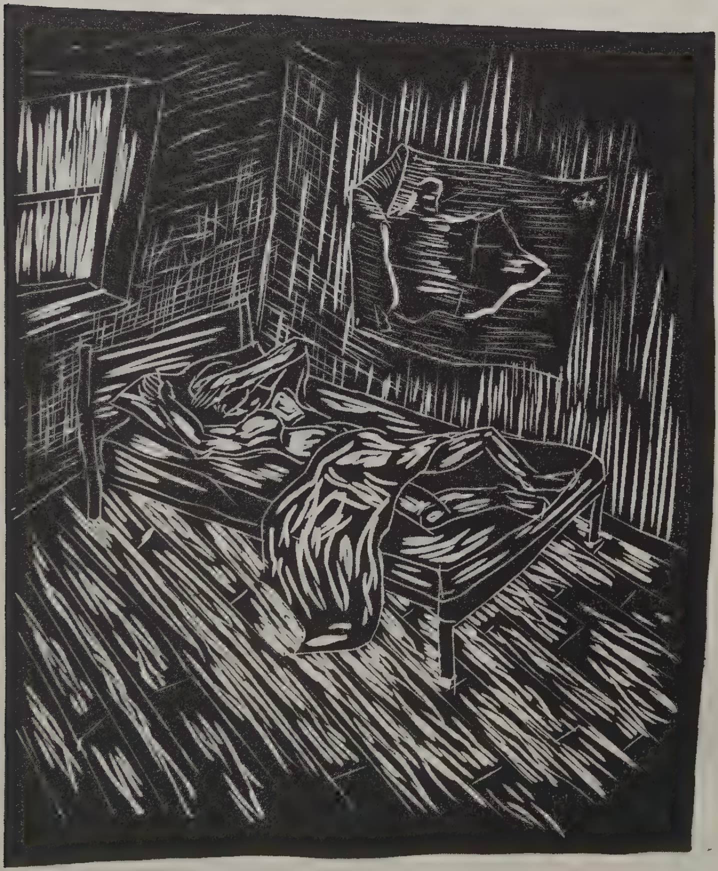
Help. The Allies are driving me crazy.
They've started to crawl out of my pantlegs,
they climb over my shirt.

How do I know which of them is me?

I'm telling you, this is a serious matter.

One of them said: "I'm you and you are MY ally."

Dear doctor, is this what they call madness?
Or is all of this a dream?



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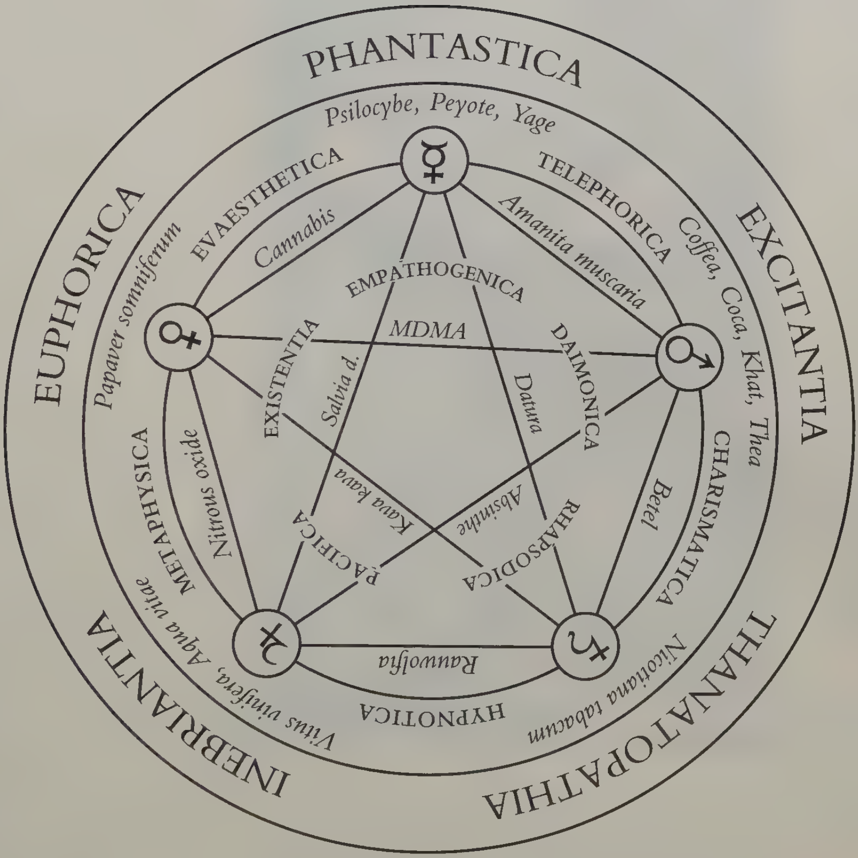
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Psilocybe, Peyote, Yage
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TELEPHORICA
Amanita muscaria
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Coffea, Coca, Khat, Thea
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Nicotiana tabacum
♄
HYPNOTICA
Rauwolfia
♃
INEBRIANTIA
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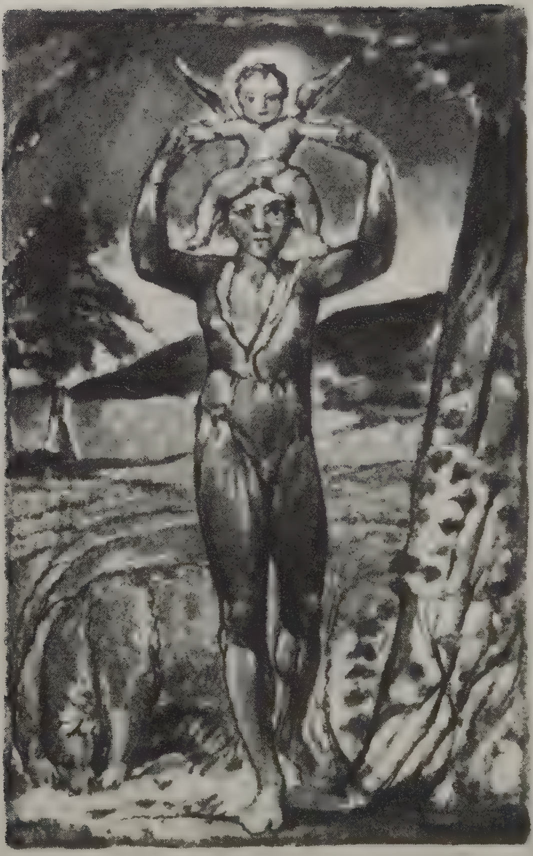


SONGS OF EXPERIENCE, BLAKE, 1794

PHARMAKON: ON POISONOUS KNOWLEDGE

Pharmacognosy is the study of poisons and remedies. The emphasis on *gnosis* over *logos* connotes an experiential tradition, based more on sampling and testing than on theory.

> *As the true meth-*
> *-od of knowledge*
> *is experiment*
> *the true faculty*
> *of knowing must*
> *be the faculty which*
> *experiences, This*
> *faculty I treat of.*
>
> *—William Blake, All Religions Are One*

Pharmacognosy is particularly focused on natural sources—minerals and venomous animals, but especially plants and plant poisons, the working material of the first science. Pharmako/Gnosis, then, is poison knowledge, drug knowledge. In the sense of knowledge from drugs, rather than of drugs, it is the forbidden knowledge, but knowledge with the power to heal.

The greatest poisons are mind poisons, those that destroy conceptions, unlearning everything you have been taught. In the dialectic, poison is the antithesis.

> *Thus all radiant poisoners love darkness.*

We turn things upside down to find a new synthesis. This is the work of the alchemical furnace, the *athanor*. It was called the "Great Work." We call this process of unlearning the *poison path*.

> *That* it *is real. That* it *is not real.*
> *That* it *is both real and not real.*
> *That* it *is neither real nor not real.*

If, as Lao-tzu said, the True Way cannot be defined, then, if we consider our poison path to be any sort of a true way, it follows that our definitions will miss the point. But then again, why should anyone on the poison path worry about it being a "true way"?

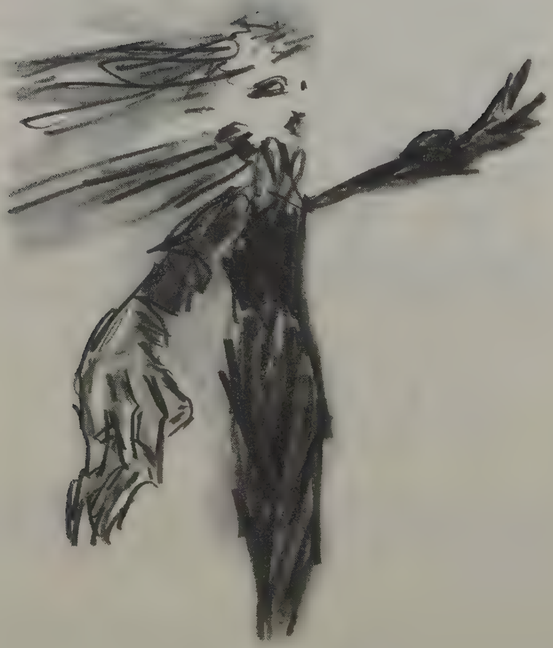
We learn to beware of words, especially warm fuzzy words, words of light as much as words of hatred, words of comfort and benevolence as much as words like virtue, patriotism, or justice. Trusting Lao-tzu, what we seek is more like a meandering stream or like a playful animal, perhaps with large canines and hot breath, with a bushy tail and furry ears. Our animal doubts, and by most would be called foolish.

If some study enlightenment, we study illusion. We seek medicine in the very poison that has seduced us. The mind, we might say, is too much with us, so let's heap on some more.

> *The left-hand work.*

Whatever. On the poison path, don't expect to find any friends in the camps of the True Believers—our traveling companions are the *pharmaka.*

> *Then there are the true believers of the poison path:*
> *but their life expectancy is so short*
> *you should borrow money from them*
> *any chance you get.*



ENVENENEDORA, R. LOPEZ

PLANT TEACHERS AND THE PATH OF EVE

Plants were the first of earth's creatures to establish extraterrestrial contact, beyond the sulfur vents and the acid radicals deep in bedrock, or at seafloor ruptures—the first to contact the greater cosmos.

Intelligence collectors, electron transfer chains up an entropic pathway, through latent complexities of space, a shamanic balancing act at 1 A.U.

> *Every carbon atom in our bodies has at one time passed through*
> *the chloroplast membrane of a plant.*

Plants are the placenta of animal life, from an ancient time before the humans (*homunculus, humus*, hence "earthlings") were a wisp of dream in a chancy future.

Out of excess and exuberance, a great swirling, and a song arose. Katydids, cicadas, munching on green. Autophagia really, or eating the god.

And the gods fought back: alkaloids, CNS poisons, tryptamines, beta-carbolines, lianas snaking from the canopy. Fungi garnered the recycling trade. Partnerships, parasites, nothing standing still.

Oils, terpenes, carbohydrates, protein, the main course of the teachings. And beyond, like a graduate school, "secondary metabolites," the poisons, the medicine.

> *Ye shall not eat of it, neither shall ye touch it, lest ye die.*

The Original Prohibition, our first drug law.

To plant people everywhere, certain plants are regarded with a special reverence: the sacred plants, sharing something of godly nature. That which had been attacked, that which resisted, the rebels, "thus far and no further shalt thou come."

Plants represent immediacy, a seamless suchness. No comments. No philosophizing, no rationalizing. Just the Fact. The Buddha once preached a whole sermon by holding aloft a flower. Kasyapa understood and smiled.

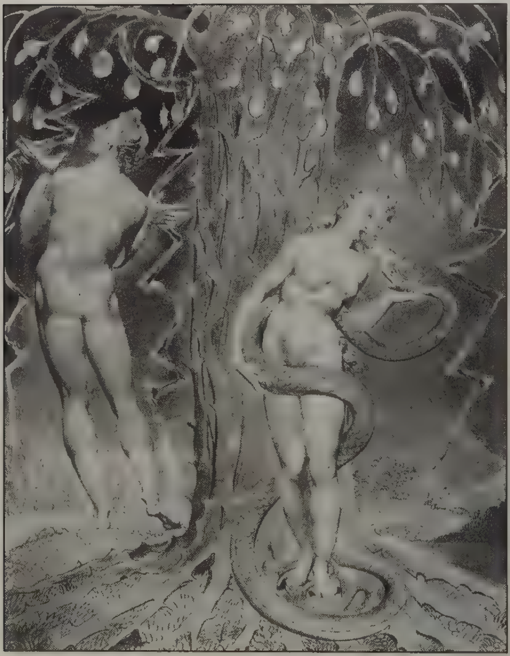
We can find the songs in ethnopoetics, or hear the prayers from those who have maintained the archaic connection, but it's all in Milton:

> *O Sacred, Wise, and Wisdom-giving Plant,*
> *Mother of Science, Now I feel thy Power*
> *Within me clear, not only to discern*
> *Things in their Causes, but to trace the ways*
> *Of highest Agents, deem'd however wise.*

There was a great taming, leaching the tannins or cooking out the cyanide: acorns, cassava, breeding the tame ones. Women's work. Root gatherers and kitchen chemists. A few of the god-plants entered the *chagra*, the circle, like barbarian nomads finding a fertile valley, but mostly they stayed wild, became a specialty of those daring to eat wildness, the bitter. These were plants with a voice: the Tree of Knowledge.

On a large bronze door cast around 1020 in the cathedral in Hildesheim, the Tree has a mushroom shape. It may be modeled after a daisy, or the abundant local mayweed, *Anthemis*, a small nub of disk flowers, the ray petals drooping, or perhaps a deadly *Lepiota*, *L. castanea*, or, some say, *Psilocybe semilanceata.* In a fresco on the ceiling of the Romanesque church in St. Savin in central France, the Tree resembles *Amanita muscaria* with tiny fruit hanging from the cap. This is perhaps a Byzantine stylization of a date palm. *Or is it?*

O Sovran, virtuous, precious of all Trees
In Paradise, of operation blest
To Sapience, hitherto obscured, infamed,
And thy fair Fruit let hang, as to no end
Created; but henceforth my early care,
Not without Song, each Morning, and due praise
Shall tend thee, and the fertile burden ease
Of thy full branches offer'd free to all;
Till dieted by thee I grow mature
In knowledge, as the Gods who all things know;



ADAM AND EVE, BLAKE, 1808

Eve has many depictions, sometimes thin, sometimes fleshy or nubile, sometimes like Isis. On the North portico of the gothic cathedral at Rheims, she cradles a small reptilian creature in her arms, tenderly. Blake made her voluptuous. From a distance, his painting of Eve accepting the apple from the mouth of the serpent looks like an act of fellatio, Eve's hand caressing the serpent's head like the head of a penis. At Notre Dame it's a threesome, our loving forebears joining their hands together around the Serpent's arboreal phallus. Eve's way: the one who dared, and the one who shared. The goddess and protector of the poison path.

Shall I to him make known
As yet my change, and give him to partake
Full happiness with mee, or rather not,
But keep the odds of Knowledge in my power
Without Copartner?

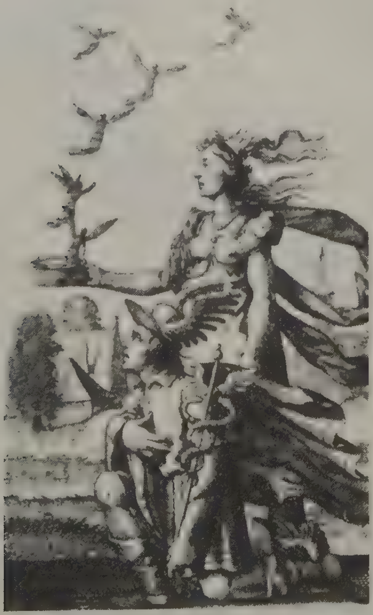
So Eve is also Pandora, the gifted and the all-giving. Poisoned apple, poisoned gift, all the sorrows of life on the great wheel of becoming. Poison and medicine are samsara and nirvana, forever wedded: the *pharmakon*.

In an African version of the Pandora story, what was left at the bottom of the casket was a gourd of beer, that given by the gods. Enthusiasm is ebriety. God within. *Entheos.*

> *As with new wine intoxicated both*
> *They swim in mirth, and fancy that they feel*
> *Divinity within them breeding wings*

A playfulness in the sacrament: within the poison, a gift. The truth, as glimpsed by Hegel, "is thus the bacchanalian revel, where not a member is sober." Hence, dialectic: a fugitive quality, a beyondness. Atalanta fleeing, the Great Matter, ultimate seriousness, but it never quite stops dancing. We can point to it, we can present it, but in the end it refuses definition. And we are grateful.

> *So saying, from the Tree her step she turn'd,*
> *But first low Reverence done, as to the power*
> *That dwelt within, whose presence had infused*
> *Into the plant sciential sap, derived*
> *From Nectar, drink of Gods.*
>
> *—Milton, Paradise Lost*



PANDORA, THE ALL-GIVING

VISIONARY PLANTS

Time to close the books.

Time to open the library of the world.

Wading through something like phosphorus, a greenish glowing on the sand, sometimes up to our hips.

Three men and two women, plenty of starlight, a bright winter beach, our eyes pierce the darkness easily. And movement, our movement, a moving pentagram, two vertices converging, pentagon to rectangle to triangle and back to pentagon. A force, faintly discernible as a visual field, blows us one to another, and back: the "Karmic Winds," a zigzagging meander out over the wide beach to the ocean.

When it begins.

Too late now to change bets.

The wheel spins, and the ball is already falling.

Almost a trembling. Flashes of color in the sky, morning star, waves of orange, pulsations, bursts of pink and yellow. No one can move, our feet sink into the sand.

The flashing continues, deepens, more and even more spectacular, filling the sky, an orgasmic energy surging through our bodies, each of us moaning aloud. Tiny stars explode like brief magnesium novae, then disappear, a glow remaining and building.

And the birds join. The birds, birds we couldn't see, birds from somewhere, birds from everywhere, all talking about it, singing, chirping, they all see it and feel it, louder and louder, our voices joining theirs.

You have wagered your mind and your soul.

You have wagered your sanity.

You have wagered the rest of your life.

It's like an earthquake, no, a sky-quake—a celestial event. What is it, this happening? Something big, something huge. Some of us fall to knees, strength sapped, calling, an orgasm that goes on and on and on.

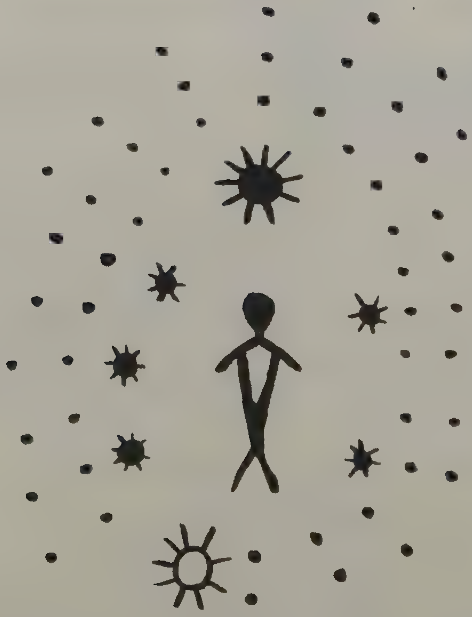
That which is happening is what we are.

Ribbons of weaving orange light, brilliant streakings of turquoise, more pulsations, waves and waves of incredible power, a cosmic energy of galactic scale, dwarfing the earth. It continues. It builds. Some critical mass is accumulating. We can no longer move by our own volition, it has absorbed us totally. Whatever it does, we do; we are in its power.

Joy.

The sun is rising. It has poked up over the low mountains on the eastern horizon. We have witnessed the rising of the sun. We all talk at once. We want to hug, cry, dance, extinguish ourselves. The sun has returned.

The sun, that we had forgotten about, has returned.



RAIN ROCK, KLAMATH RIVER

MORNING GLORY: IPOMOEA VIOLACEA

Common names *Tlitliltzin.*

Heavenly Blue. Pearly Gates.

Ololiuhqui, sometimes applied to morning glory, is the Nahuatl word for the seeds of *Turbina corymbosa* (*Rivea corymbosa*), a closely related plant.

Flying Saucers. Blue Stars. White Magic.

Who named these plants?

Wedding Bells. Summer Skies.

Related species *Turbina corymbosa* (also called *Rivea corymbosa*) and *Ipomoea sidaefolia*, are found in Oaxaca, central Mexico, and the Gulf coast from South America to Florida. Hawaiian baby woodrose, *Argyreia nervosa*, contains similar alkaloids, as do some other Mesoamerican and African species of *Ipomoea.*

Ipomoea purpurea ("Crimson Rambler," etc.), a common ornamental, does not contain alkaloids. Various studies are summarized by Ott (1993).

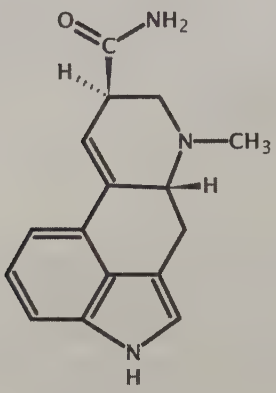
Taxonomy The bindweed family: Convolvulaceae. The genera in this family are weakly defined: species and genera intergrade. Some taxonomists have placed *Turbina corymbosa* in the genus *Ipomoea (I. sidaefolia)*, along with the other morning glories. *Ipomoea batatas* is the sweet potato, a food staple of the Aztecs. Schultes and Hofmann (1980) include sweet potato in their list of "plants with alleged hallucinogenic effects," the list below "plants with possible hallucinogenic effects." As far as I know, the matter of the psychoactive sweet potato is still an unresolved question of science.

Part Used The seeds.

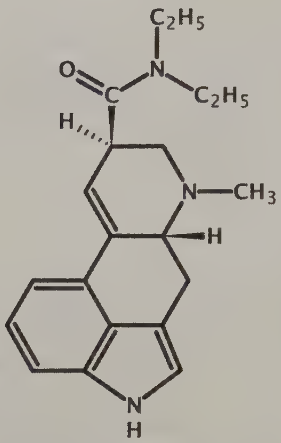
Chemistry Lysergic acid amide ("LSA"). By chemical extension, if the two protons clinging to the nitrogen atom are replaced by ethyl groups, we have d-lysergic acid diethylamide ("LSD"). LSD has not yet been found in a plant.

Besides ergine (d-lysergic acid amide), *ololiuhqui* and other psychoactive morning glories contain isolysergic acid amide and half a dozen other closely related compounds of various toxicities, including ergometrine (ergonovine), a powerful uterotonic.

Ergine, or LSA, is about one-twentieth the potency of LSD, a threshold dose being 500 micrograms (one-half a milligram) to one milligram.



lysergic acid amide



lysergic acid diethylamide

How Taken

Mesoamerican Indians ingested the seeds in a drink for purposes of divination. Their method of preparation was the same as that currently employed by the Mixe, the Zapotecs, and the Mazatecs. The seeds are finely ground (by a virgin), soaked in cold water for a few hours, and the resulting infusion then strained through cloth to remove the solid matter. Unless chemistry and/or self-experiment determine some other method more effective, the wise student best pay attention to the traditional methods of those with the greater experience.

One theory is that only the water-soluble and generally psychoactive alkaloids will be extracted, while the more dangerous and toxic oil-soluble alkaloids will be strained out.

Morning glory seeds (*Ipomoea violacea*) are about five times as potent as *ololiuhqui (Turbina corymbosa)*, and Hawaiian baby woodrose seeds *(Argyreia nervosa)* are five times the strength of *Ipomoea violacea*. Other species of *Ipomoea* vary widely in their alkaloid content, some being very strong, others containing no alkaloids at all.

> *Allen told me a story about finding morning glories growing in a prison yard in Texas. He and a friend spent a Saturday morning picking the seeds and eating them. They missed the whistle and had to go see the warden when they checked in late. They managed to appear contrite.*

Four or five seeds of *Argyreia nervosa* can be active. Ten seeds is a high dose. As few as seven or thirteen seeds of some Mexican *tlitliltzin* can be an active dose. Ott recommends starting with no more than 20 to 25 seeds, but few North American varieties have that kind of power; 200 to 400 seeds is more common.

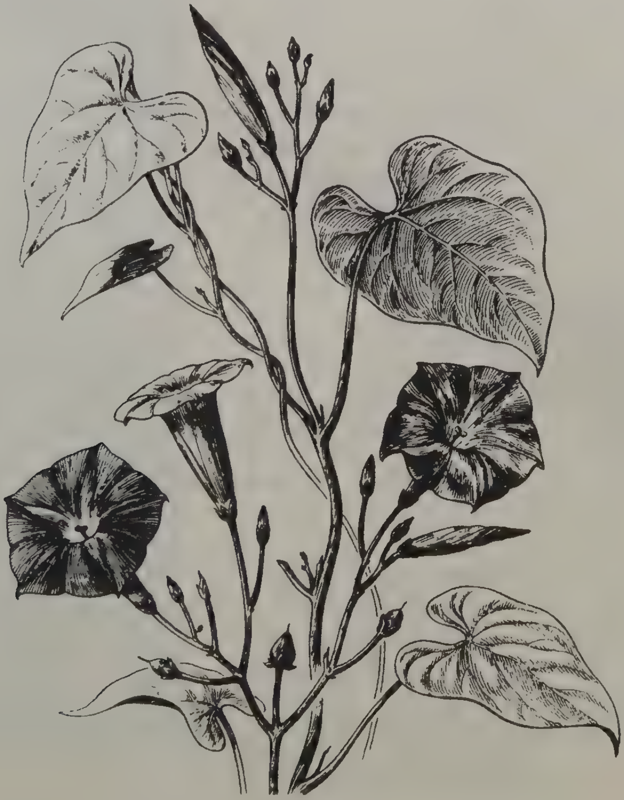
The methodology for experimentation should be the same as when testing a new mushroom for edibility: start small. See how well your body endures the poisons, and proceed from there. As the incautious mycophage has long ago been weeded out from their fraternity, mushroom-hunters are a good group to learn from.

Effects Albert Hofmann claimed, after self-experiment, that LSA was a narcotic-sedative as much as a hallucinogen.

Many users experience some cramping or nausea shortly after ingestion, probably due to the uterotonic properties of lysergine alkaloids (LSD can also have this effect). Lying flat on one's back is said to be the best remedy, and the cramping usually passes relatively quickly. Effects begin between thirty minutes and an hour, and last for four to six, even eight, hours.

moving and flowing—
dream/waking
blur.
Or are we dreaming
always?

Colors. Plants, ready to talk. Me, just as I am. Act of faith.



IPOMOEA VIOLACEA, E.W. SMITH

The Plant Much esteemed by a few aficionados. Most find LSD both more reliable and more pleasant. The plant freaks smile to themselves and gently shake their heads.

Not the same. Not the same.

The indigenous people of Oaxaca use various species of *Ipomoea,* as well as *ololiuhqui,* for divination and curing, exactly as had the Aztecs five hundred years before them. Gordon Wasson wrote that *ololiuhqui* and *tlitliltzin* are more widely used today in Mesoamerica than *teonanácatl,* the sacred mushroom.

Many Mesoamerican Indians believe that the *tlitliltzin* speaks so clearly and plainly that the services of a shaman are unnecessary. Unlike the mushrooms, the seeds are usually given to one person at a time.

The Plant *Ololiuhqui,* "the round ones," in Nahuatl. Sometimes *coaxihuitl,* or *coatl-xoxouhqui*:

Snake plant, the green snake plant.

Chemistry The same alkaloids occur in both *Ipomoea violacea* and *Turbina corymbosa*, and in the same relative proportions. The difference between *Turbina* and *Ipomoea* is the presence of lysergol in the former and ergometrine (ergonovine) in the latter.

The Plant According to Fray Diego Durán, boys would catch small venomous animals, such as spiders, scorpions, centipedes, lizards, and vipers. These were burned and mixed with tobacco, *Datura* and *ololiuhqui* into a salve, which was then applied to the body as an unguent to kill pain. Durán said that the Indians would cover their bodies with the black pitch, after which jaguars and other dangerous animals would run away from them in fright.

Effects Some claim them to be profound.

The Ally 10:15 pm. Drank a cold water infusion of 300 seeds of Heavenly Blue. Ground them in a spice grinder, and then with mortar and pestle. Soaked in cold water for three hours, stirring occasionally. Filtered through double layers of cheesecloth. About one cup of liquid. Not bad tasting. Herbal and wild, but not bitter.

The Plant

Piule: Zapotec for ololiuhqui.
Xtabentum: "precious stone cord," Mayan.
Tlitliltzin: "the sacred black ones,"
Bahdo negro, or badungás: Zapotec.
Yaxce'lil: Mayan.
Mazatec: na-so-le-na "flower-her-mother."
Mayans call morning glory xtántikin, "dry penis."

The Ally 10:40 pm. Took a shower and a bath. Soaking in the tub felt good. Closed my eyes. A weird and penetrating sound wormed into my thoughts. Opened my eyes: it was the faucet, dripping. First alert.

Standing, bending, toweling off brings some slight nausea. Some anxiety. But I was even more anxious before I started. Mainly I just want to lie down. If I had a uterus, would I be cramping? Maybe. Tightness in the gut.

Closing eyes, thoughts/mental events are loud, amplified. I try to keep my eyes slightly open, and to follow my breathing.

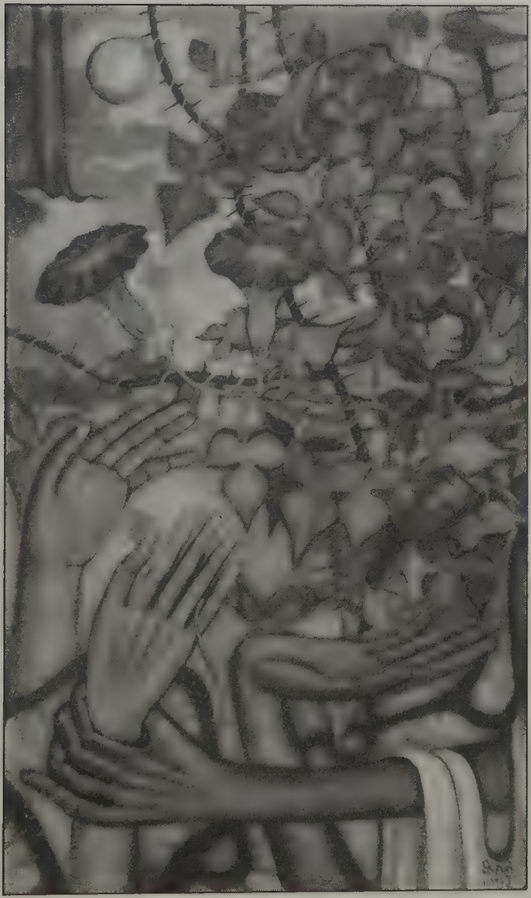
•

The Plant

Ololiuhqui was first described by Francisco Hernández, personal physician to the King of Spain, who studied the natural history of *Nueva España* in the sixteenth century. Hernández was a skilled ethnobotanist, describing the plant accurately and including a drawing in his report. According to Hernández, a poultice of *ololiuhqui* seeds was used to cure eye troubles, and a drink prepared from the seeds was an aphrodisiac. He compared the use of *ololiuhqui* as a divinatory agent to *Solanum maniacum,* a tropane nightshade described by Dioscorides.

Half a century later, in 1629, Hernando Ruiz de Alarcón described the use of *ololiuhqui* more extensively in his *Treatise on the Heathen Superstitions.* Alarcón had been brought to the attention of the Inquisition because he was torturing and conducting his own autos-da-fé, matters of Inquisitional jurisdiction. The investigation that followed found that his error had been made out of ignorance rather than malice, and his zeal was recognized and rewarded with an ecclesiastical judgeship in the Holy Office.

The religious character of the War on Drugs has been obfuscated as much as possible. Only when the speciousness of the arguments of public health and crime are refuted by logic, science, and sociological research do the warriors sometimes reveal their true beliefs and prejudice: i.e. that the use of *phanephoric* ("vision-bearing") plants is a threat to civilization itself, by which they mean their religious hegemony. Willfully exploring self and consciousness with the aid of plants is considered worse than mere criminality, it is seen as heresy and blasphemy, as an attack on all that is holy to the "true god." And the heretics are prosecuted accordingly. Twenty-year-olds in their tie-dyes, arrested at concerts or raves for possessing MDMA or a stack of blotters are often given longer prison terms than embezzlers or killers.



IPOMOEA, WITH HANDS,
SICHALI, SRI LANKA

> *Almost all of them [the Indians] hold that the ololiuhqui is a divine thing. . . . And with the same veneration they drink the said seed, shutting themselves in those places like one who was in the sanctasanctórum, with many other superstitions. And the veneration with which these barbarous people revere the seed is so excessive that part of their devotions include washing and sweeping even those places where the bushes are found which produce them, which are some heavy vines, even though they are in the wilderness and thickets.*
>
> *—Hernando Ruiz de Alarcón, 1629*

Matters of State and Liberty

The War on Drugs was launched by the European invaders shortly after their arrival in the New World. Possession of the sacred seeds was made a crime, and Alarcón, like other ecclesiastical authorities, began a campaign of uprooting and burning the vines wherever he could find them, along with those who tended them. The Holy Inquisition itself was formally inaugurated in 1571, set up to ferret out lapsed *maranos,* Sephardic Jews who had feigned conversion to Christianity, in addition to exterminating heresy among the converted Indians. The Inquisition specifically ordered the prosecution of divination by hallucinogenic plants.

> *Since preaching has not sufficed, rigorous punishment is needed, because, being—as they are—children of terror, it may be that punishment may accomplish what reason has not been sufficient to, since the Apostle said, compelle intrare. ["Compel them to come in." Luke 14:23.]*
>
> *—Hernando Ruiz de Alarcón*

A war of sacraments.

Wine was the blood of Christ, but the Aztecs had their own sacred plants: *teonanácatl,* "God's flesh," the sacred mushroom, and *teotlacualli,* "food of God," an unguent prepared with *ololiuhqui.*

> *The sorcerers persuade the people with such ease that they find it unnecessary to use menaces or to torture or threaten them with the wheel of blades of Saint Catherine or the gridiron of Saint Lawrence.*
>
> *—Fray Diego Durán*

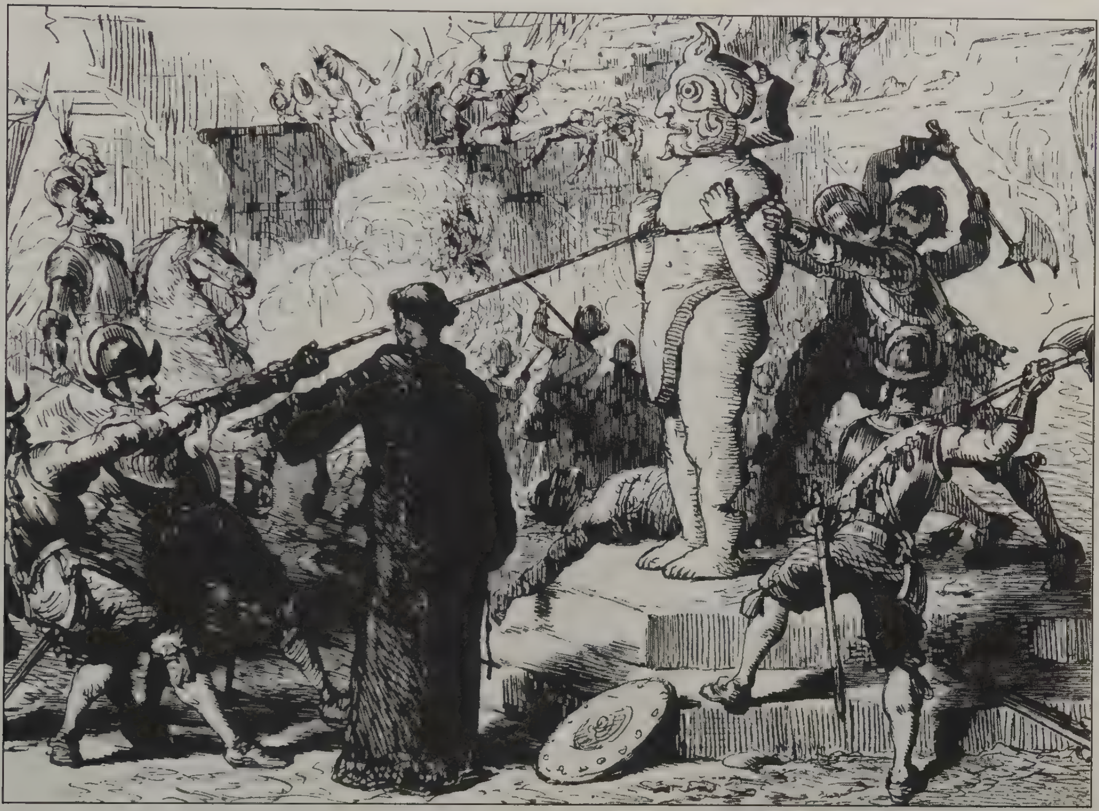
Alarcón complained that in spite of severe punishments, the Indians seemed to be more concerned with maintaining the good will of the *ololiuhqui* than with escaping the fury of the Inquisition.

> *aco nechtlahueliz: let it not be that he become angry.*

The Ally

10:50 pm.

> *Drifting.*
> *Phantoms. Truths. Insights. Connections. Poems.*
> *River of dreaming.*



FUNDAMENTALISTS DESTROYING A STATUE

"There aren't any good things in those values."

Values/thoughts. Dharmas. All are ill. *Dukkha.*
The Way of Makyō is the Path of Ill.
Up to your armpits in samsara.

Go further.

11:00. Ring? Or ring in the mind? Which telephone? Either way it wakes me up. Thoughts, jokes, all flowing down the river and over the falls. Who is guest and who is host? We dine together. The guests pay their way by talking and telling stories. But the banquet is interrupted.

(a pebble striking bamboo . . .)

Who knocks? Serres's *parasite.* Alcibiades banging at the door.
The gods come to visit.

The Poison

Don't take It unless you want to know everything simultaneously, hell & heaven, terror & ecstasy —

When I tell you to try it it is afterwards in a room with solid furniture, remember that.

—Alden Van Buskirk, "Lami in Oakland"

Matters of State and Liberty

Alarcón's program was the extirpation of heresy, syncretism, and the works of the Devil. He feared divination, and he feared the resemblances of Mesoamerican religion to his own. He feared the easy way that the Indians could assimilate Catholicism without denying the older gods of their own land. He feared the little carved animals and figures, the "idols." He found them hidden in piles of rocks at passes and crossroads. He found them hidden in churches where the people would place their offerings of copal. He even found one that had been built into the base of a large cross (after the cross had been struck by lightning). And he found them in the specially woven baskets that hid the *ololiuhqui.*

1. *Arrest the delinquent outside of the village, so that he cannot take precautions or warn others.*
2. *Place guards at his house and place his nearest relatives under guard.*
3. *Don't trust the local authorities as 'usually there is no one who is faithful.'*
4. *The judge should seize the evidence in person, as the delinquent Indian will often swallow the idol if it comes into his reach, 'even though he is already convicted and knows that if he swallows it he will surely die.'*
5. *In searching a house, be diligent, examining even old and dirty pots.*

—Hernando Ruiz de Alarcón

As Moses said,

I the Lord thy God am a jealous God.

Tlitliltzin is above all a plant of divination. Alarcón reported, with some indignation, that some of the Aztec doctors "practice *ololiuhqui*-drinking as a profession." Alarcón distinguishes between the false results of divination, "just a representation of the imagination caused by the conversation," and the true results, which are revealed by the Devil.

Despite the Apostle Mathias having been selected by the eleven as Judas's successor by the casting of lots, the Church had inveighed against divination of any form in 300 CE. Fortuna had been mostly disassembled by Chance—but the Devil, the one who could speak truth, was a far deadlier foe.

> *The Devil usually mixes something of our holy religion in those apparitions of his so that he whitewashes his malice and lends a color of goodness to such a great evil.*
>
> *—Hernando Ruiz de Alarcón*

The Ally

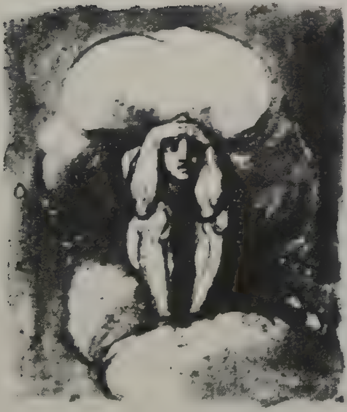
11:15. I'm fairly comfortable. Don't want to get up. Some belching. The dog is sleeping upside down with all his feet splayed out into the air: from me? Fluidity begins. Formerly distinct partitions between categories, perceptions, and thoughts blur, visually.

A ripple in the lake: grass and sedges rippled beneath.

In the mountains at a lake, wave patterns on the transparent surface of the water. Sunrise. Birds darting over the lake like bats, feeding. Blue.

Grasses on the bottom of the lake, his mind the mud.

Out across the lake the breeze breaks up the glassy surface into alternating patches of smooth and rippled water, like pages, the rippled areas like an ancient script.



BLAKE, 1787

Cursive runes. Stelae.
At an oasis on the Silk Road in the Takla Makan.

The letters and words of an eidetic alphabet—the script of knowledge.

WE WILL SHOW YOU HOW TO READ OUR LANGUAGE.

YOU MAY ASK US ANY QUESTION.

The world as poison. This world. Of all possible and parallel and coexisting universes, this particular one: the one in which stones are heavy and thoughts light. "The world is a drug." Not a metaphor but a tautology.

"What are the poisons?"

WE ARE THE POISONS.

All dharmas are poisons. Stone in the mind, goose in a bottle.

"What is seeming and what is real?"

WE WHO SHOW YOU THE REAL ARE SEEMING.

WE CAN SHOW YOU THE PLACE

WHERE POETRY AND MATHEMATICS ARE ONE STUDY.

Ratio and metaphor as the warp and woof of being: the root construction of existence. The topography of noesis.

COME TO US.

The light on the water supported his weight. In the middle of the lake he thrust his hand into the water and fell through.

The Plant

Dondiego de día.
Dompedro.
Marrvilla.
Manto de Maria.
Semilla de la Virgin.

Curings are performed at night, and quiet is important. Sometimes the doctor speaks into the patient's ear, reminding him of his questions. To an outside observer it may appear that the person is talking to himself.

Sometimes the ally speaks in visions rather than in voices. If the visions are hellish, it is said to be because a taboo has been broken. The remedy is to eat chilies and salt and to go to sleep.

The Ally 11:30.

(hey, he still hasn't moved up off of the bed)
(yeah, what's he doing down there?)

I close my eyes again and whatever that was has a kind of a box form, but the box is glowing—a deep purple-blue neon glow.

The words are sinking. The clock is running down.

(Yes. That means you are dying.
The time allotted to works is not infinite.)

Words sinking.

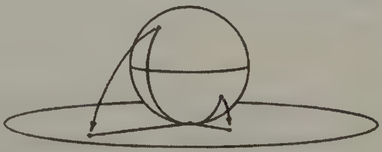
(some may rise up, have their own life,
live for awhile in the free air like butterflies . . .)

I have arrived at square minus one.
From here we could go anywhere.
A voice would lead me.

(a voice whispering into my ear)

Find the lost key and take it to the door you see.
Put the key in the lock and unlock the door.

I breathe and don't begin.
Non-arrived at square minus one.
Abide.



The Poison

4 packages (160 seeds) Ipomoea tricolor (Clark's early blue morning glory) crushed and in gelatine capsules swallowed; wait 4 or 5 hours then smoke some pot, turn out lights, lie alone in dark room & start imagining anything, start *with any image & let it send out another. Don't drink or take any depressants. Luck.*

—Alden Van Buskirk

The Ally 12:00. Endless jokes and puns about (0,0) compared to {-1}, but I don't rise to write it down. Something about mental events, a twist of isobars, seed of cyclones. Go further or cut it off and come back. Cut it off, freeze it, or float away. The beauty, the jokes,

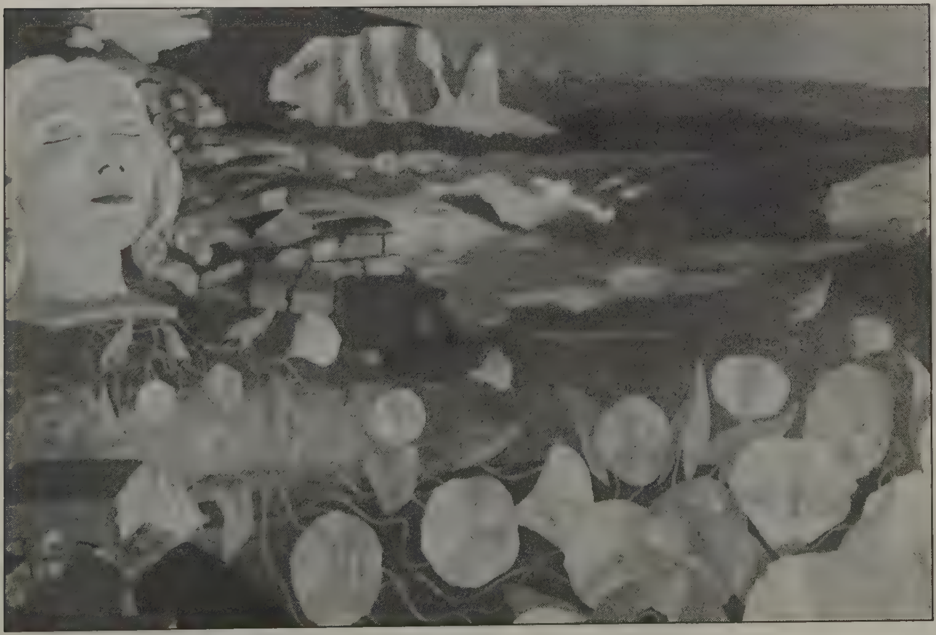
all a dream we dreamed
one afternoon long ago

—Robert Hunter, Phil Lesh

Karma is the link from one thought to the next. The endlessly arising dharmas and phantoms, Mara and Buddha. The uninvited guest is the ring. The knock. Door bursting open. Alarm clock. The medicine.

The Ally *I am ready to come back to you. I've lived my life a million times over in a few hours, seen everything, known too much, & now I'm burnt out, want only love & peaceful madness of America seen & shared with your eyes.*

—Alden Van Buskirk



DREAMING HEAD, J. ARMSTRONG (1893–1973)

The Plant

Considering the easy availability of psychoactive morning glory seed, the ease of growing them, their tolerance of many climate zones, and their floral beauty, it is remarkable that more plant people do not make use of this ancient and time-tested plant. It says something about the availability of LSA's better known diethyl cousin.

◆

Pharmacology

ERGINE: (LA-111, D-LYSERGIC ACID AMIDE):
mildly "entheogenic" and sedative at 500 mcg to 1 mg
according to Ott, 2 to 5 mg according to Hofmann

LYSERGIC ACID N-(1-HYDROXYETHYL) AMIDE:
1/3 to 1/2 the uterotonic activity of ergometrine

ISOERGINE: Hofmann: sedative, but possibly entheogenic at higher doses

CLANOCLAVINE: no outstanding pharmacological activity

ELYMOCLAVINE: excitation

LYSERGOL: excitation

ERGONOVINE (ERGOMETRINE) AND METHYLERGONOVINE:
entheogenic 2 to 10 mg (Ott, et al.).
Hofmann: uterotonic/haemostatic agent.
large doses psychotomimetic (Wasson et al., 1978)

METHYSERGIDE:
serotonin antagonist (used for migraine)
"entheogenic" 4 to 12 mg

◆

Turbina corymbosa: fill bottle cap. 0.012% alkaloids.
Argyreia nervosa: start 4 to 5 seeds. 0.3% alkaloids.
Ipomoea violaceae: 0.06% alkaloids.

◆

The Plant

I. violacea: quiebraplato, "plate breaker."
Mixe: piH pu'ucte.sh, "broken plate flower."
Ma-sung-pahk: Mixe, morning glory, "bones of the children."
La'aja shnash: Zapotec, "seeds of the virgin."

◆

Gordon Wasson and Jonathan Ott note that the contemporary Mexican term for morning glory seeds, *semillas de la virgen*, probably does not refer to the Virgin Mary, but to the virgin who ground the seeds.

The Ally

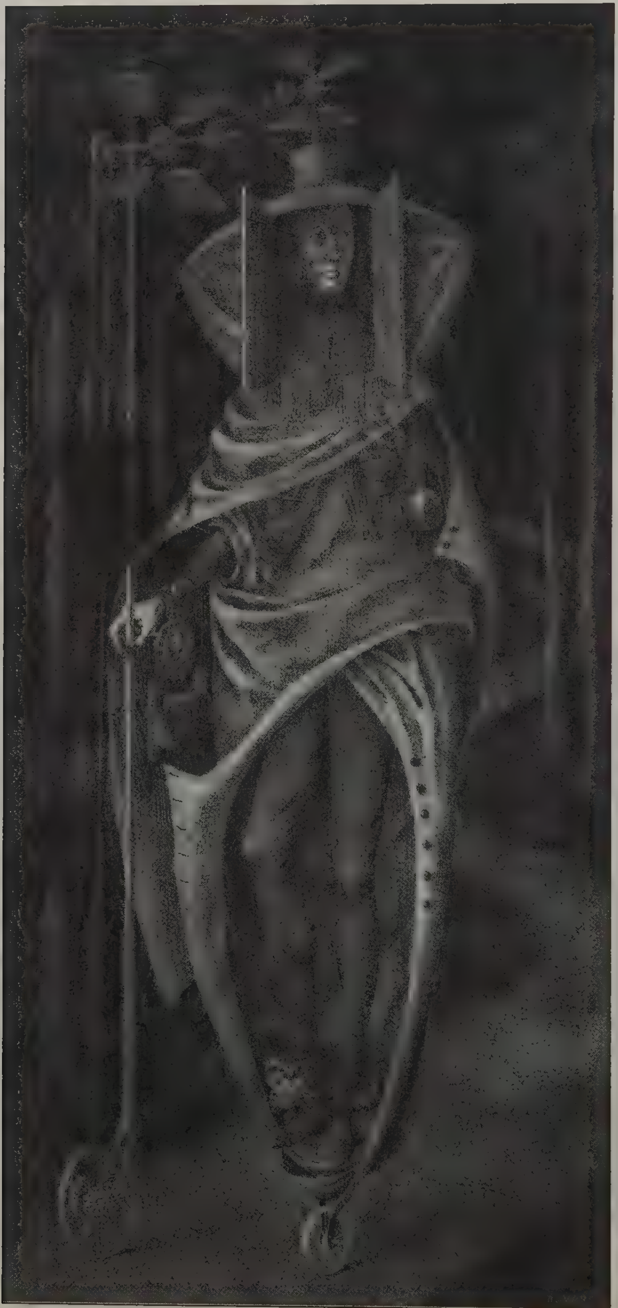
1:00 am. Pupils still large, hard to read, hard to focus. The words blur. Tried eating a piece of chocolate. Too many alkaloids. Water is better.

Music. Branford Marsalis in a long jam with the Dead. All the instruments distinct and separated.

2:00 am. Gut still hard. Tired. Mind still very active, but I will sleep and let the dream be dreaming.

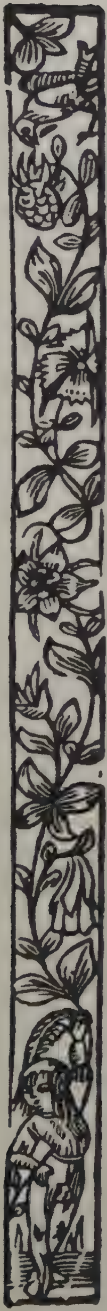
The dreams of the children.
The little ones who come to tell you.
The plant children, our children,
who grind the medicine.

MAZATEC WOMAN, WASSON COLLECTION, 1962



VAGABUNDO, VARO, 1957

ON RECEIVING VISITORS



I'd been in the cabin about a week when a visitor came. It was around one in the morning. I heard him walk up the steps to the door.

Four legs, I thought, toenails.

Since this was my first visitor, I thought I should get up, but by the time I had climbed down from the loft he was gone.

Well-mannered.

The lamps were out, no one up, so he didn't push it.

Or she.

I opened the door and saw a shadowy form stop under an oak and look back at me. At the same moment that our eyes met all the crickets stopped chirping.

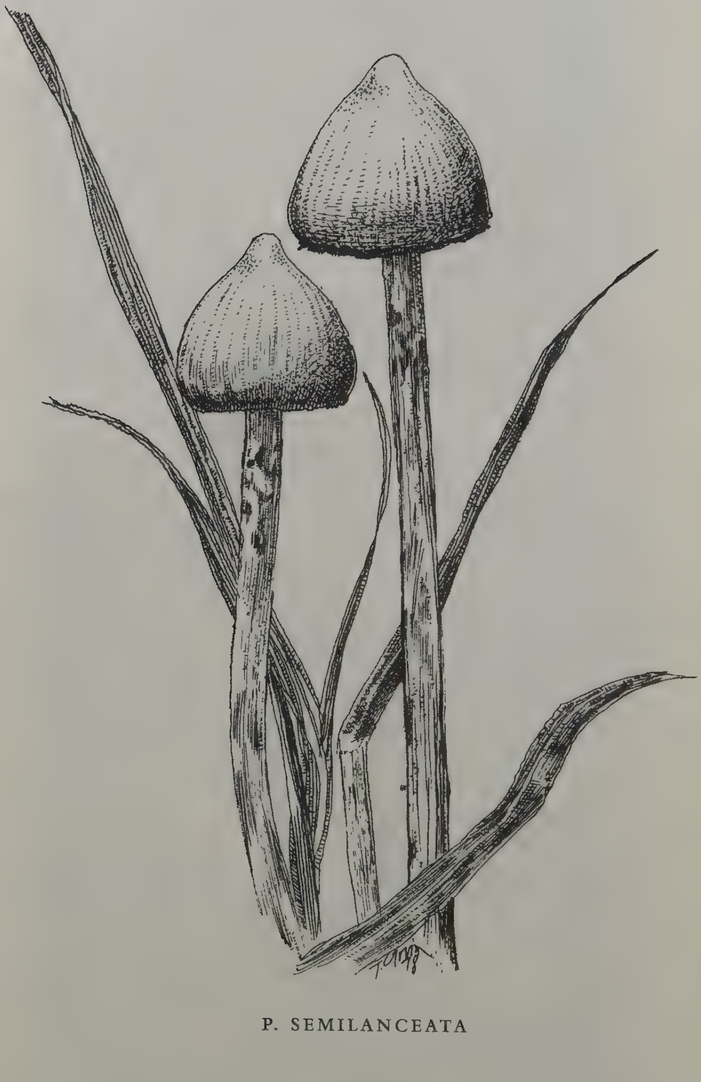
I don't even know your name, I thought.

The name is what keeps us apart, he answered.

I felt my hair stand up. His voice had been clear, but in my mind. We kept staring at each other. It was like a scene from that story by Rilke.

How did you do that?

That I asked out loud. It broke the spell, and whatever it was, had been there, was gone. There were tiny luminous lines in the sky connecting the stars into constellations. I didn't recognize any of them.



P. SEMILANCEATA

THE GENUS PSILOCYBE: TEONANÁCATL

I am the Morning Star woman, says
I am the Cross Star woman, says
I am the Moon woman, says
I go up to heaven, says
I am the woman of the great expanse of the water, says
I am the woman of the expanse of the divine sea, says
There I am asking you for your principal herb, your sacred herb, says
Your clean herb, your well-prepared herb, says
I am going there, says
On my knees for hands, on my knees for feet, says
On my knees of tortillas, on my knees of water, says

—Maria Sabina

Psilocybe is the "smooth-head" genus. Psychoactive ("hallucinogenic") species frequently stain blue when bruised, due to the oxidation of psilocin. The spore prints are generally purplish black to purplish brown, and most of the species are on the small side.

Active species, here listed loosely in order of strength (based on Paul Stamets, 1996), include: *Psilocybe azurescens, P. baeocystis, P. bohemica, P. semilanceata* ("Liberty Caps"), *P. cubensis* [=*Stropharia cubensis*], *P. cyanescens, P. tampanensis, P. weilii, P. hoogshagenii, P. stuntzii, P. cyanofibrillosa*, and *P. liniformans*. Other potent species include *Psilocybe aztecorum, P. caerulescens, P. mexicaca,* and *P. zapotecorum*. In *Psilocybin Mushrooms of the World*, Stamets describes over sixty species of *Psilocybe*, as well as active species of *Paneolus, Conocybe, Gymnopilus, Inocybe,* and *Pluteus*. G. Guzman's monographs recognize 173 species of *Psilocybe*, over half of which are psychoactive, and, in Stamets's words, "more are being discovered each year."

Psilocybes can be broadly grouped into grass-lovers, wood-lovers, and dung-lovers. The little elf-capped *P. semilanceata* is typical of the grass-lovers, while the robust *P. cubensis* is a well-known dung-lover. *Psilocybe cyanescens* and the spectacular *P. azurescens* are characteristic of the wood-loving and chip-mound species.

Specimens meant for ingestion are often called "shrooms." Maria Sabina called her mushrooms "the children."

How Taken Indoors, at night, in a circle. Outdoors, in the forest, wandering. In the desert. On the prairie. In Madrid. In London. In Germany. In Florida, at a Grateful Dead show, in tie-dye. Alone, when you must speak with the spirit yourself, one on one.

Effects Entheogenic, manifesting god within. And yet that doesn't say it. Psychedelic, revealing the soul. And yet that doesn't say it. Hallucinogenic, generating visions. And yet that doesn't say it, either.

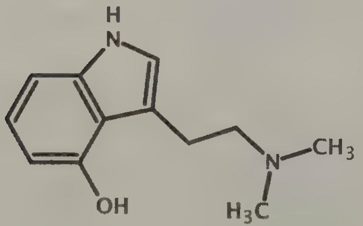
> *"It was the most incredible, wonderful, and meaningful single experience of my life."*

And yet it's not just one experience.

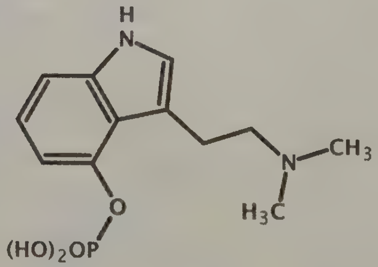
Physical effects include dilation of pupils (mydriasis), piloerection (A. E. Housman's test of true poetry), and an increase in body temperature. Enhancement of monosynaptic reflexes, such as the patellar reflex, has been observed in cats, though one wonders how the test was performed.

Chemistry The mushrooms contain psilocybin, psilocin, and baeocystin, in widely varying amounts. Psilocin is the psychoactive molecule. Psilocybin is dephosphorylated into psilocin in the body. Psilocin is 4-hydroxy-N,N-dimethyltryptamine, DMT with a hydroxyl group on the number 4 carbon atom of the indole ring.

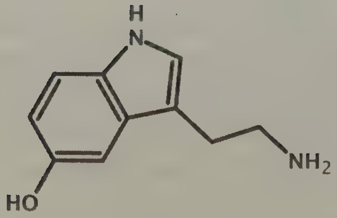
Serotonin is 5-hydroxy-tryptamine. One might wonder what would happen if we methylated serotonin, replacing the two hydrogen protons on the nitrogen atom with methyl groups. Looking up this molecule, 5-hydroxy-N,N-dimethyltryptamine, in the Merck Index tells us that it is bufotenine. Things are falling into place, mushrooms into toadstools, a major neurotransmitter in-between. Or are they?



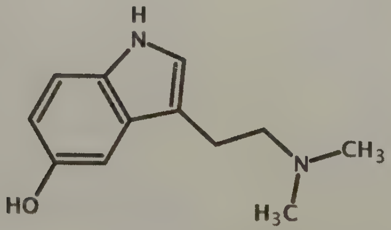
psilocin



psilocybin



serotonin



bufotenine

The Government thought so, and placed bufotenine in Schedule I of the Controlled Substances Act. Unfortunately, the Controlled Substances Act is reliable neither as an indication of toxicity nor as an indication of hallucinogenic properties. Although the Merck Index lists bufotenine as a hallucinogen, several experiments have failed to demonstrate any hallucinogenic effects beyond some visual disturbance. The principal effect of bufotenine on a group of unfortunate prisoners on whom the drug was tested was to turn their skin a bluish color from cyanosis. Still, reports from the field, such as the use of *Anadenanthera columbrina* by healers in northern Argentina, continue to suggest profound activity for bufotenine, at least in certain modes of ingestion. But back to mushrooms.

Part Used The whole carpophore contains tryptamines: pileus, gills, and stipe. Young mushrooms seem to be stronger than those that have fully opened. The available nutrients can have a large effect on the tryptamine content, as has been shown in laboratory studies by Jochen Gartz and others. Fresh, live mushrooms are always the best.

The Ally The poison can get stuck. Sometimes it sticks in the teeth and makes the gums ache. Sometimes the poison gets stuck in the stomach and you feel some nausea. If you can let the power go, if you can let the spirit take over and let the power flow on to wherever it is going, these physical symptoms usually pass.

Or become irrelevant.

How Taken The usual item of commerce is *Psilocybe [Stropharia] cubensis* dried and sealed in an airtight bag. Doses vary between 1 gram (very light) to 3 grams (medium) to 5 grams (a strong dose) to beyond 5 grams (medicinal). Expect tryptamine content to vary. Age degrades the activity of most *Psilocybe* mushrooms, especially *P. cubensis*, and old mushrooms can produce "the mushroom yawns." Innovative propagation and growing techniques have been able to increase the tryptamine content by a factor of four or five. Liberty caps (*P. semilancealata*), from the Pacific Northwest, are more potent than *P. cubensis*, and *Psilocybe azurescens* are the most potent of all—the dosage can be halved. Sometimes a single small azure can be plenty enough for a deep mushroom journey.

Dried mushrooms go down easily with honey. Ancient Mesoamericans took their mushrooms in chocolate—still a rewarding practice. Simply grind the dried carpophores in a coffee grinder and stir the powder into the chocolate. Some fast before partaking.

Mushroom effects last for about four hours. Setting is important. Appropriateness is part of the solar medicine, part of walking in beauty. The great gift of the mushroom ally is a special clarity and intelligence, a special and compassionate healing presence. The experts, the people who kept the ally alive for four hundred years while the rest of the world pursued more destructive visions, say that matters relating to the mushroom allies are *muy delicado*. The mushroom people know that the little ones have a sacred nature, and they use them within sacred space—that is, there is an altar of some sort and prayers are said. The interaction with the mushroom is reverential, even if it is sometimes punctuated by laughter or shouts of wonder. The spirit opens the gate to "that which matters," so respect, and a certain humility, are appropriate.

The Ally

Hello, spirit, welcome, dear spirit,
my cougar, my puma, my snarling lover,
bring me words. I know you.
And now I see your wound,
and now I see your death,
and wailing is my only song.

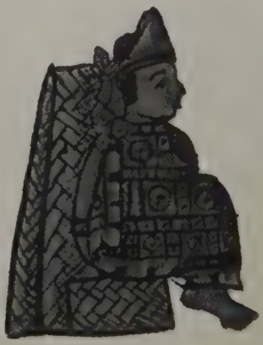
History

Teonanácatl means "flesh of the gods" in Nahuatl, the language of the Aztecs.

This is my body.

Historians reported how the flesh of the gods was consumed at the coronation of Moctezuma II: the mushrooms were ingested with chocolate. Other accounts relate that mushrooms would be served to visiting diplomats and heads of state, in order to see the outcome of future wars or alliances. Among the nobility, intoxication of any kind was frowned upon. The priests did not use mushrooms. "Like one who eats mushrooms" was a slur applied to wayward sons and "the bad noblewoman." Soothsayers ate mushrooms—but they were social outcasts anyway, a part of the rabble that had to be tolerated. One high social class that did seem to use the mushrooms freely was the *pochteca*, the long distance traders, who were also the cacao merchants. The pochteca were probably Mayans or Toltecs, but the Aztecs were so completely import-dependent that they had to keep their traders happy.

> *They ate the mushrooms before dawn when they also drank cacao. They ate the mushrooms with honey and when they began to feel excited due to the effect of the mushrooms, the Indians started dancing, while some were singing and others weeping. Thus was the intoxication produced by the mushrooms. Some Indians who did not care to sing, sat down in their rooms, remaining there as if to think. Others, however, saw in a vision that they died and thus cried; others saw themselves being eaten by a wild beast; others imagined that they were capturing prisoners of war; others that they were rich or that they possessed many slaves; others that they committed adultery and had their heads crushed for this offence; others that they had stolen some articles for which they had to be killed, and many other visions.*
>
> *—Fray Bernardino de Sahagún*



MOCTEZUMA II

Out of town, of course, in villages and in the mountains, the plant people continued their mushroom rites as they always had.

Perhaps because they found the parallels with their own theophagic religion too obvious to be comfortable, or because they were mycophobic people for other reasons, the Spanish Church persecuted the mushroom cult even more vehemently than the other sacred plants, peyote or *ololiuqui*. In 1620 the Holy Office of the Inquisition in Mexico City formally decreed that ingestion of inebriating plants was heresy. The War on Drugs is still a religious war.

Inquisitors and other zealous churchmen tortured any mushroom priests they could find to extract more information about the ally and her people, for names and locations. Even though the plant people went into hiding, only those in the most remote areas were able to escape the wrath of the servants of the Savior.

But some of Christ's servants had misgivings. Fray Diego Durán, writing in the late 1500s, remembered that Jehovah, also, had once demanded human sacrifices. Durán began finding parallels between the two religions everywhere he looked, so much so that he became convinced that one of the Apostles must have visited Mexico. Both the Hebrews and the Aztecs believed that God had created the World in the Beginning. The Pyramid of Cholula was like an Aztec Tower of Babel. The Aztecs kept an ark of holy relics. Topiltzin had parted the waters with his staff to allow his persecuted people to pass, while their pursuers were drowned.

FRAY BERNARDINO DE SAHAGÚN

Durán found parallels between Aztec and Jewish food prohibitions, and likewise in ritual bathing. Topiltzin was like Thomas, healing, and performing miracles. The Aztecs had cloisters of chaste nuns with rules much like those of the Catholics. The Aztec priests, like the Catholic, offered penance for sins, observed Holy Days, and even wore their hair in a tonsure. Sacraments, incense, candles, confession, baptism, a flayed god, all before him like a smoking mirror.

> *They used the nanacátl which are wicked mushrooms, also intoxicating like wine. Having drunk and eaten these, they gathered in a plain where, for their pleasure, they danced day and night. This they did on the first day, for on the next day they all cried very much saying that they cleaned and washed their eyes and faces with their tears.*
>
> *—Fray Bernardino de Sahagún*

Who was Topiltzin-Quetzlcoatl if not one of the Apostles? Either an Apostle or Satan, the Master Deceiver who could make his Diabolical Doctrines look so much like the True that it became difficult indeed to separate one from the other. Diego Durán struggled with his doubts.

The Ally

come in, you orphans,
come in, bear, twin bear cubs,
with beads you come,
dressed in woven beads you come,
in patterns, in the patterns we weave,
turquoise beads, beads of yellow ochre,
with black beads and with red beads woven
on your back, my lizard, my writhing one,
you come bearing grief,
and now I know what keening is.

Effects Some informants claim that *Psilocybe* mushrooms have fewer physical effects than does LSD—other informants say that the opposite is true. The first stages of mushroom intoxication are often accompanied by muscular relaxation.

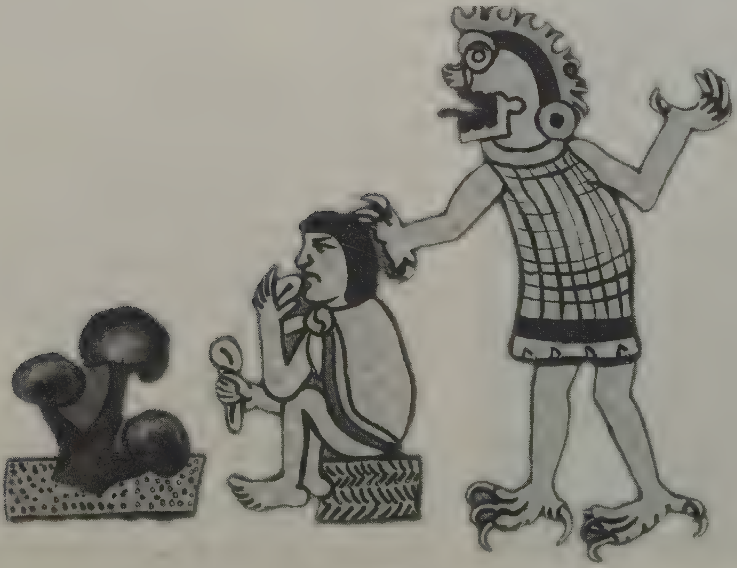
But those aren't the effects!

No.

Le llevan ahí donde Dios está.

The Plant As serotonin mediates the neuro-muscular junction in lower orders of animals, Dennis McKenna once suggested that psilocin might be a slug poison. As slugs are an annoying problem where I live, certain experiments come to mind.

Poisoning the slug within.



TEONANÁCATL, MAGLIABECHIANO CODEX, 16TH C.

Perhaps we were slugs first and children after. Slug-brain could become a positive epithet, a new paradigm of a deeper consciousness, of thick skin and collagen and mucous, of musculature, extension and contraction, the sacred knowledge of all that is wet and sticky, all that moves and flows by itself with no division of self and object, of observer and phenomenon.

dancing there was before thinking,
and we dreamt before we danced.

But her deepest gifts are not about epistemology nor ontology, nor morality.

An Edenic pre-human wisdom, locked away, stashed
in ancient life forms like scrolls hidden in a cave.
Or like angels of an archaic race of gods,
whose temples are part of mind, whose foundations
have seen countless cities and empires rise and fall.

The gods left us a book containing their knowledge. The script of the book is like a score of music. The words of the book are visions. Cellular receptors are the Rosetta Stone where the picture language is deciphered, where our nervous system is the instrument upon which the singing books are played.

History

The mushroom had hidden itself so completely that in the early twentieth century as great an ethnobotanist as William Safford declared that *teonanácatl* was peyote, that the Spanish chroniclers had mistaken the dried buttons of peyote for mushrooms, that there never had been any sacred mushrooms. An amateur ethnobotanist disagreed. Blas Pablo Reko published a book in 1919 in which he stated his belief that *teonanácatl* was indeed a mushroom, and that he believed it was still being used. Reko's voice lacked the academic authority of William Safford, but he continued. In 1936 he received some corroboration from Robert J. Weitlaner, an anthropologist, who claimed to have witnessed a mushroom ritual and backed up his claim with some samples of the mushrooms.

The sample mushrooms crossed the Atlantic twice before arriving at the Harvard Herbarium, where they were inspected by a young ethnobotanist named Richard Evans Schultes. Because of the disintegration of the mushrooms, Schultes was able to identify the samples only to genus, *Panaeolus*. But Schultes' interest had been sparked, and in collaboration with Weston La Barre, he published two articles in the Harvard Botanical Leaflets raising objections to Safford's thesis that *teonanácatl* was peyote. A year later Schultes teamed up with Reko in the field and collected a number of species of mushrooms now known to be psychoactive in Huautla de Jiménez in Oaxaca. Fifteen years later the existence of Schultes' field work was passed on to R. Gordon Wasson by the poet Robert Graves.

Wasson spent three summers in Mexico tracking down the mushrooms before he found Huautla and Maria Sabina.

LIFE MAGAZINE: MAY 13, 1957

BERT LAHR AS A BUMBLING LOVER

TEEN-AGE ALLOWANCES

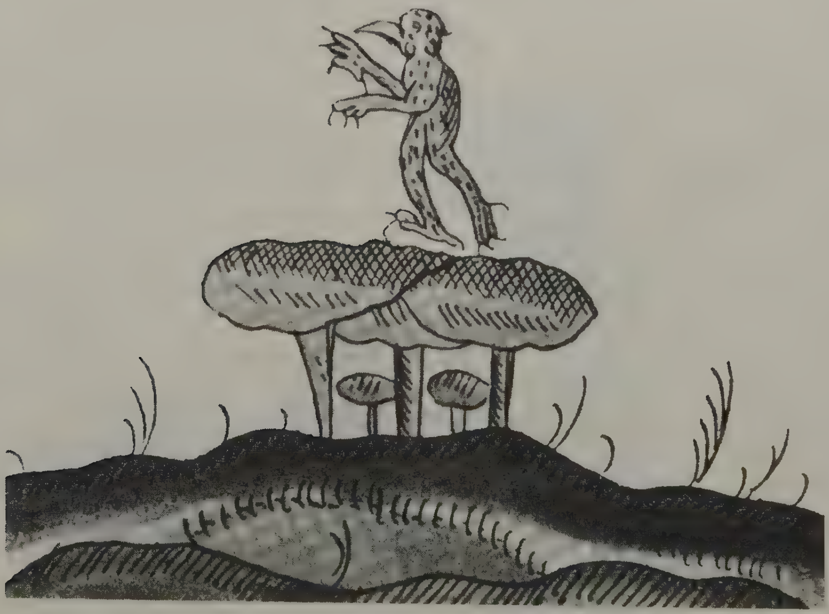
MEET PRIME MINISTER DIEM

WITH HIS VISIT THIS WEEK THE U.S. GETS TO MEET DIEM, A POLITICAL UNKNOWN WHO BECAME A PRIME MINISTER AND IS SAVING VIETNAM FROM COMMUNISM.

A FIERY CAREER'S QUIET CLOSE: THE DEATH OF SENATOR MCCARTHY

THE DISCOVERY OF MUSHROOMS THAT CAUSE STRANGE VISIONS

SEEKING THE MAGIC MUSHROOM: A NEW YORK BANKER GOES TO MEXICO'S MOUNTAINS TO PARTICIPATE IN THE AGE-OLD RITUALS OF INDIANS WHO CHEW STRANGE GROWTHS THAT PRODUCE VISIONS.



FLORENTINE CODEX, SAHAGÚN, 16TH C.

Poesis

Psilocybe mushrooms, and *P. cubensis* in particular, can be quite variable in potency. Jeremy Bigwood reported that alkaloidal content of *Psilocybe cubensis* varied significantly even between different carpophores of the same batch.

Drying and storage seem to be much more critical with *Psilocybe* cubensis than with other *Psilocybe* spp., such as *P. semilancealata. Psilocybe semilancealata* shows only minimal degradation even after years of storage. According to C. B. Gold, *Psilocybe cubensis* contains an enzyme (that *P. semilancealata* does not) that breaks down both psilocybin and psilocin. The enzyme needs water and oxygen, and Gold warns about re-activating the enzyme when preparing the dried mushrooms for ingestion. If Gold is correct, one would not want to rehydrate the mushrooms and then let them sit around for a day or two.

According to Paul Stamets, who knows his subject well, North American *Psilocybes* appear to be anthropophilic, only rarely found in wild, virgin forests, but lovingly colonizing areas of human intrusion. One new species, in particular, deserves mention. *Psilocybe azurescens*, a member of the caramel-capped *Psilocybes*, has been finding its way from the dunes near the mouth of the Columbia River to other beaches and to piles of wood chips, especially alder chips, across North America and probably around the world. *Psilocybe azurescens* has the highest psilocybin content of any known mushroom, easily twice the strength of *P. cubensis*, and is a beautiful and robust member of the genus in both appearance and quality of spirit. The bluing reaction is so strong it verges on black. The mushroom stores well, dried. On beaches it is often associated with beach grass, *Ammophila maritima* (also spreading).

Landscaped grounds around public buildings, such as libraries, museums and police departments are good places to find wood-loving *Psilocybes*. A friend collected a bagful of *Psilocybe cyanofibrillosa* in front of a county courthouse in Marin. Those mushrooms love wood chips, and some watering. There are stories of a secret band of *mushroom guerillas* who inoculate the large piles of wood chips waiting to be distributed with a little *P.* mycelium. . . .

The Ally

bring me words, my panther wife,
blinded by brilliance we are.
we, the clever ones, the peacocks,
blinded by brilliance we are,
the beads, the beautiful beads,
the beads in patterns, the turquoise beads,
the beads we weave,
they blind us, O mother

Pharmacology/ Toxicology

Considering its close molecular similarity to serotonin, it is not surprising that psilocin interacts with 5-HT2 receptors-the serotonergic system. Almost all of the psilocin is excreted unchanged in the urine.

The only specific action of psilocin on bodily organs is to decrease serotonin. The LD50 in rats, mice, and rabbits is 280 mg/kg, two and a half times less toxic than mescaline. If the lethal toxicity in human beings is comparable to those other mammals lovingly sacrificed for the benefit of our scientific knowledge, it would take twenty or twenty-five grams of pure psilocybin to be fatal in one-half of the cases. That corresponds to over ten pounds of dried *Psilocybe cubensis mushrooms.* As one would expect, there are no known fatalities.

LIFE MAGAZINE: MAY 13, 1957

INTERRUPTED INAUGURAL: NICARAGUA HAS FORMAL RITE BUT NO FUN

> TAKING THE OATH AS NICARAGUA'S PRESIDENT, LUIS SOMOZA GOES THROUGH RITUAL IN SOMOZA STADIUM, NAMED FOR HIS LATE FATHER

LETTERS

> SIRS: I WAS NEVER SO SHOCKED IN MY LIFE AS WITH THE PICTURE OF A WHITE SILK CREPE DRESS ("LOWEST YET IN LOW NECKLINES," LIFE, APRIL 22). NO DECENT WOMAN WOULD WEAR SUCH A DRESS.
>
> —MRS. JOHN PINKOS, FALL RIVER, MASS.

A STRANGE, SOLEMN RITE AND WONDERS IN THE DARK

> I FELT THAT I WAS NOW SEEING PLAIN, WHEREAS ORDINARY VISION GIVES US AN IMPERFECT VIEW; I WAS SEEING THE ARCHETYPES, THE PLATONIC IDEAS, THAT UNDERLIE THE IMPERFECT IMAGES OF EVERYDAY LIFE. THE THOUGHT CROSSED MY MIND: COULD THE DIVINE MUSHROOMS BE THE SECRET THAT LAY BEHIND THE ANCIENT MYSTERIES? —R. GORDON WASSON

U.S. BUSINESS—A GOLDEN MOOD

Poesis Of all the hallucinogenic mushrooms, *Psilocybe azurescens* may be the easiest to welcome into a garden. It's not a matter of cultivation, which in most places is illegal, it's more a matter of providing a natural habitat that wayward spores will colonize. Azures like wood chips—hardwood chips. Alder is a favorite, but I've also seen them grow on oak, buckeye, and willow. Madrone would probably work well also. Or whatever is around that isn't too pitchy. *P. azurescens* mycelium also likes cardboard, the corrugated kind from boxes. You have to be careful with cardboard, since if some cardboard or some wood chips that were already carrying mycelium were to accidentally fall into your landscaping, the mycelium would spread quickly and aggressively. Compounding this problem is that many gardeners like to use cardboard to cover chips and ground around their azaleas and roses to keep weeds down. Just a word to the wise, trying to do my part.

The best weed control technique is a small pile of wood chips spread over a small area, about two inches deep, covered with cardboard so that the chips won't dry out. Don't keep them too wet or mold or noxious fungi may grow. If you see the brilliant white mycelia of *Psilocybe azurescens* growing through your wood pile, and you don't want them to fruit in the fall rains, keep them covered. Since the mushrooms only fruit when the mycelium has spread completely throughout any given pile, making the piles too big is another technique to discourage fruiting.

◆

The Ally

and now i know, i too know,
i who have heard your cry,
i who have voiced your wailing,
now i know where words come from,
now i know where language begins,
now i know what real words sound like,
and now i know what keening is

and now i know why we walk upright
and why we leave offerings
i know the panther's cry
and now i know what keening is

and now i know,
i, the slowest of your sons, O mother,
now i too know why we decorate ourselves
and why we sing the song of the water-jug,
and now i know what keening is

THE WATER CARRIER

LIFE MAGAZINE: MAY 13, 1957

DIEM

DIEM'S NEXT HURDLE WAS THE FAMOUS "GENEVA ELECTION," THE PLEBISCITE WHICH, ACCORDING TO THE 1954 GENEVA AGREEMENT, SHOULD HAVE BEEN HELD LAST JULY 20. IT WAS SUPPOSED TO LET THE PEOPLE OF NORTH AND SOUTH VIETNAM DECIDE WHETHER A REUNITED COUNTRY SHOULD BE GOVERNED BY ANTI-COMMUNIST DIEM OR COMMUNIST HO CHI MINH IN HANOI, THE NORTHERN CAPITAL.
DIEM REFUSED TO SIGN . . .

FOUR PROBLEMS OF HOMEOWNERS

ONE SOLUTION: ALUMINUM

MUSHROOMS

MANY EMOTIONS ARE SHARED BY MEN WITH THE ANIMAL KINGDOM, BUT AWE AND REVERENCE AND THE FEAR OF GOD ARE PECULIAR TO MEN. WHEN WE BEAR IN MIND THE BEATIFIC SENSE OF AWE AND ECSTASY AND CARITAS ENGENDERED BY THE DIVINE MUSHROOMS, ONE IS EMBOLDENED TO THE POINT OF ASKING WHETHER THEY MAY NOT HAVE PLANTED IN PRIMITIVE MAN THE VERY IDEA OF A GOD. —R. GORDON WASSON

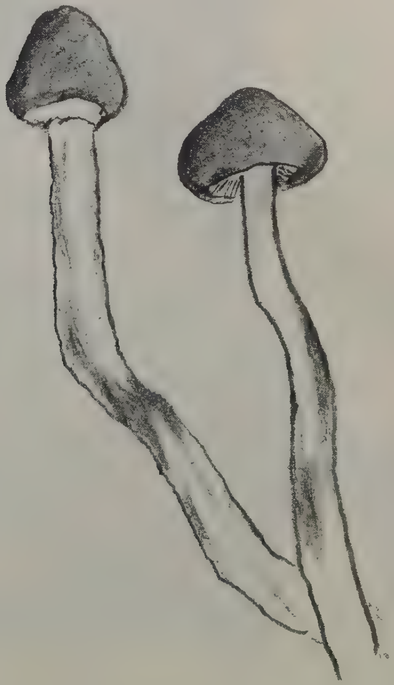
WASSON, 1957

The Ally

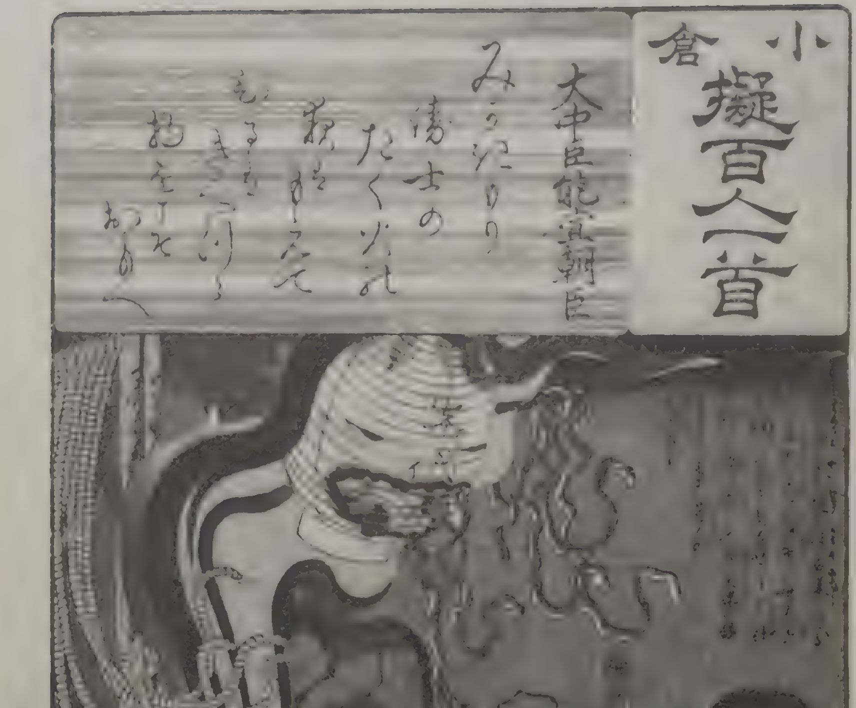
and now i know, i, too, know,
why we walk in beauty in the sunlight
why we wear woven threads, yes,
why we sing songs of woven threads

you have entered, graceful snarler,
my predator who won't be tamed,
the dogs are howling.
you bring me words, you bring me wailing
        and now i know what keening is

for now i have seen beauty, i have seen courage,
and i know why we walk upright.
stand tall, dear daughters, O sons,
walk in grace and in beauty,
you who have heard the cougar's call,
        we who know what keening is



P. AZURESCENS


小倉擬百人一首
大中臣能宣朝臣

AN ELOQUENT VISITOR

KEEPING HOUSE WITH DEMONS

> *To concoct, with whatever illegitimate art, a perfume*
> *from the poisons themselves. To find in obscure herbs*
> *and urges, in the very vulnerability, a trace of remedy—*
> *from the stale cadaver the precursor for the elixir.*

Relations with demons are a most important part of the poison path. Our way, generally, is to welcome them. To let them in, and then to give them a place to stay. Be artistic in this. The first stage is to create space for them. Make a hole in the magic circle free of barriers. Build a shrine for the demon and put some bodhisattva-like guardian in it. It's ok if the guardian is wrathful.

When a demon enters you want to get to know it. Most of all you want to learn its name. Once you know the demon's name you can open diplomatic relations. The demons you know are always better than those you don't.

> *"I'm-not-good-enough."*
> *"She'll-be-hurt."*
> *"Why-even-try?"*

Still, it can be hair-raising work. Some of them bring sharp pointy things with them, like cholla cactus spines. Some of them bring history and nasty memories—and they let you know that though you may not know them, they know you.

> *The dark side is the fuel*
> *for the furnace.*

Just

> a working
> hypothesis.

BRONZE, 7TH C.

harrowing Hell for a casket Proserpina keeps
that must not
be opend . . containing beauty?
no! Melancholy coild like a serpent
that is deadly sleep
we are not permitted
to succumb to.

—Robert Duncan, from "Poem Beginning with a Line from Pindar"

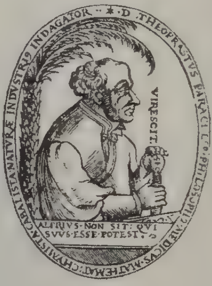
So perhaps

> we are risking too much,
> lifting the lid.

But what are the alternatives?

Give the demons something to eat, maybe some clear water. Or incense.

> *Demons teach, instruct, and inspire men; there never was a man of outstanding stature in any art or action who had no familiar spirit to guide him.*
>
> *—Paracelsus*



PARACELSUS

Some doctors have ways of binding demons, but this seems dangerous to me. More important is to be able to recognize the demon as soon as it enters the circle. That way you can respond to it. Demons don't like to have light shown upon them.

If you are lucky, they'll thank you later. Some of them can give you power. That part is tricky, because power is the particular specialty of demons—they know it intimately and know all the places within power in which to hide. Sometimes the best approach is just to say "Thank you for your unsolicited opinion. Now shut up."

However you handle it, interesting things will begin happening in your life. That's guaranteed.

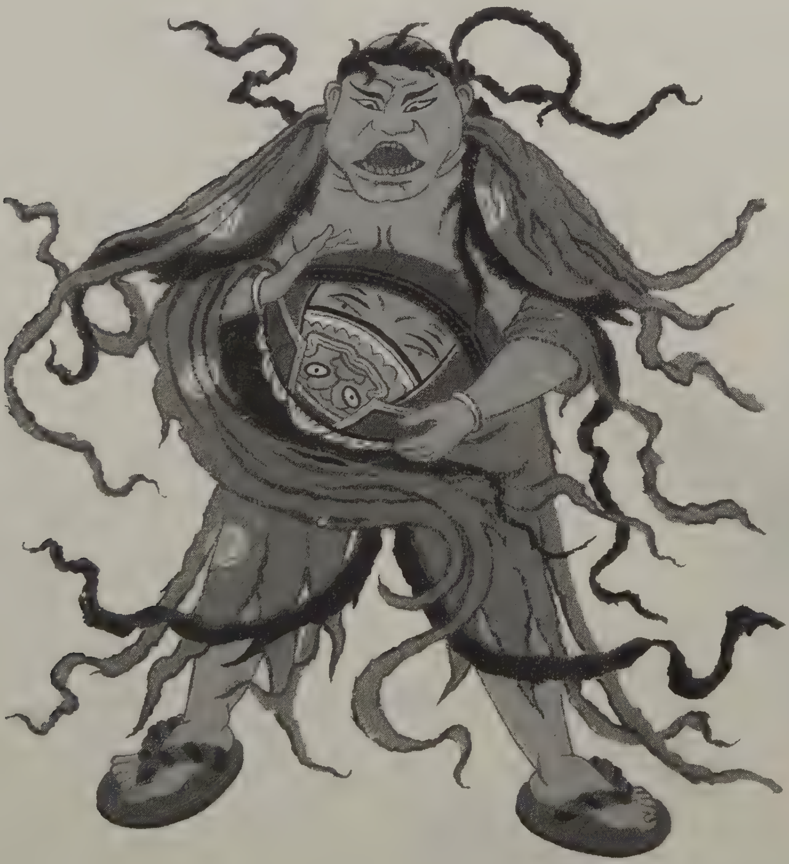
> *Maybe you will start staying up all night.*
> *Maybe you will start writing down little things on bits of paper.*

Be certain you are ready before you begin. Plenty enough uncertainty will come with the work that follows.

The demons are upon me. A fecal odor stalks me like a hungry predator.
I keep looking at the bottom of my shoes.
A homeless comedian is on the sidewalk
working the tables. The patrons have stopped
laughing. The waiters confer nervously.

Shortly their glances will shift to me.
My poem feels like the twitching tail
left behind by a lizard
as he makes his escape.

It may seem like it's easier for everyone else. It probably is.



DEMON EATER, T'ANG DYNASTY

EXAMINATION BY THE BOARD OF DISCIPLINE

They called me in. Most of them were sitting at a long table. A few were standing around the room. I recognized a number of them. There was History, Poetry, Philosophy. A Magician. A bunch of scientists: Physics and Chemistry and Mathematics. There was a Dancer, a Painter, an Inventor. Astronomy. Botany. Some of them just seemed to be Characters, and there were a few that I didn’t recognize at all. There was an Actor. There were Occultists of various persuasions. One man was a Chocolate Maker.

They all stopped their conversations when I came in and looked at me. I heard whispers of “*Oh, the Time Waster,*” “*The Loafer,*” stuff like that. They were waiting for me to say something and it got very uncomfortable.

One of them started tapping his fingers on the table and saying *da-dee-da-dee-da* in a singsong voice. The Clown started doing this funny dance, shrugging his shoulders and saying “*I dunno, do you know? I dunno, do you know?*”

The Magician pulled a penny out of the air and said, “*Well, you can always make money.*” That drew a hearty laugh from the whole crowd.

“*What a card,*” said the Joker.

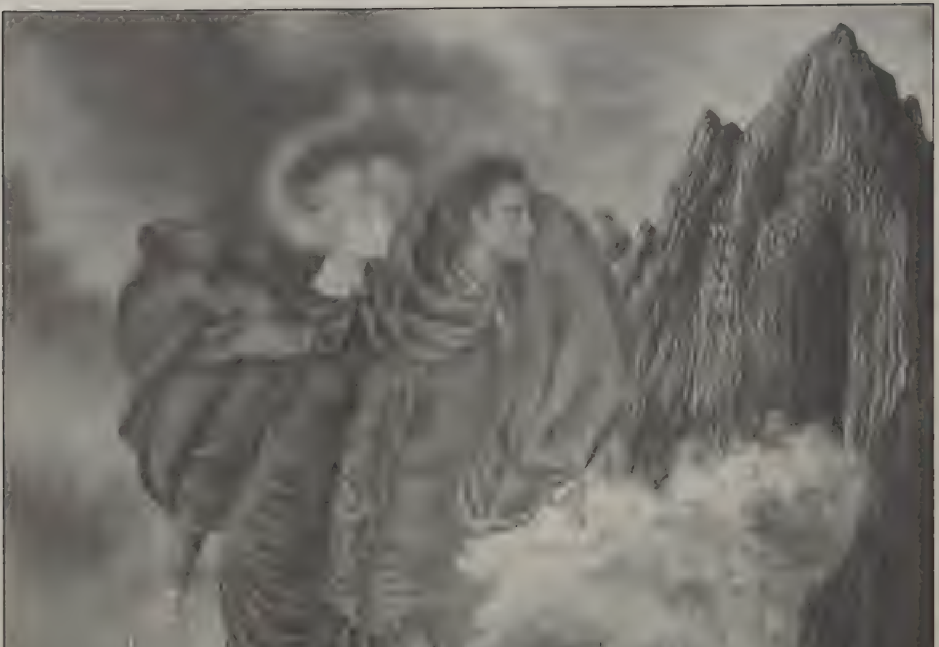
Then my Angel walked in. I was relieved. I’d wondered where she’d been. Then I saw that her hair and her dress were all disheveled. Her face was kind of flushed. Then the Rival came in, tucking his shirt into his pants and a big smile on his face.

She no Penelope.

Everyone at the table jumped up and pointed at me. “*Thief! He’s a Thief!*”

The Scarlet Woman was leaning against the wall, smoking a cigarette from a long slender holder. She put her free hand on a hip and quipped, rather derisively, “*He thinks he has to steal at least one line from every book he’s ever read.*”

The long slit in her dress opened somewhat.



LA HUIDA, VARO, 1961

ON TRAVELING COMPANIONS

Parts of our work must be done alone, other parts in a group. For certain operations you will need a traveling companion.

The traveling companion is not someone you find as much as someone you recognize. Maybe she changes herself into a bird, hops up onto a tree, then changes herself into a cat and leaps back to the ground in front of you. If you can change yourself into a squirrel and beat her out to the end of a slender branch, consider that an auspicious sign.

Maybe then she will change herself into a boa, at which time you must change yourself into a monkey, leaping from branch to branch. If then you find her in jaguar form, up ahead of you and waiting, at such times you should remember.

Catch some glimpse of the many times you have traveled with her in the past: the many shape-shiftings, the jungles passed, the plains traversed and veldts crossed. The teachings exchanged. The dangers shared.

And the laughter. Much laughter.

To Nike,

Catching things you've thrown yourself
is merely clever or venial profiteering—
it's only when, quite suddenly, you catch the ball
that she, your eternal teammate,
has thrown to your very center,
masterfully and precisely, in a high arc
(like that God would use if building a bridge):
only then is your catching-skill true treasure—
not your own, but the world's. And if you then
possessed the power, the heart, to throw it back—
no, even more wonderfully, forgetting heart and power,
were already throwing it back. . . (the way
the seasons throw up flocks of birds,
hurling them across oceans from the ebbing
to a waxing warmth). Only high risk
could validate your joining such play.
Not making it easy, not making it difficult,
you will simply throw—the meteor lifting
out of your hands, and flaming into its own spaces.

—Rainer Maria Rilke

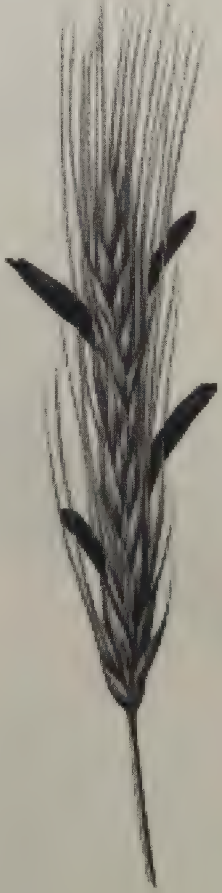
DAS MUTTERKORN: THE MAKING OF DELYSID

The Preparation

Albert Hofmann received his doctorate
"with distinction," having cracked the secret
of chitin, which had eluded many others,
in three months, by employing the digestive juices
of a snail, common in vineyards.
He turned down
two high paying offers
in order to work with natural products
at Sandoz.

When the earth opened, Dysaules's son Eubouleus
lost his pigs, but kept
his wits and marked the spot,
so when the Mother came, looking
for her girl, the swineherd
was able to show her
the cave.

I created front companies to buy
fifteen pounds of ergotamine. Tried to make sure
the purchases couldn't be
traced.



Plane trees on the banks of the Ilissos.

Poppies, poppy wine, and a pig-roast,
bloody hands praying to Demeter.

The goddess
had fasted nine days:
"Initiates! Into the sea!"

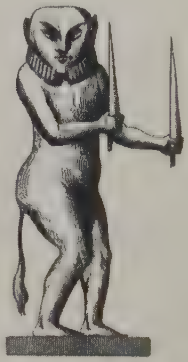
The Sacred Way

Sprigs of myrtle,
Hofmann studying ergot, sharing a fanless fume hood
with two other chemists, not allowed
any of the company ergotamine, patiently
learning the secrets of the mother corn.

It took six gallons of hydrazine to convert the ergotamine to isolysergic hydrazide.
You can isomerize it later.

On the fifth day, the mystai
gathered in the morning, left by the Sacred Gate
in the Potters Quarter, began the long walk
to Eleusis, singing and festive:
"Come, arise, awaken from your sleep!"

The mushroom trail started in Russia, birch forests
stretching from Estonia to Kamchatka, the Wassons
tracking the elixir of god across the Caucasus
to the Indus River—Agni and Soma, horsemen,
worshippers of the Trinity: they knew birch, beaver,
herding, metallurgy, the spoked wheel,
and patrilineal descent.


PAAN, MYSTAI GUARDIAN

The Bridge

The road drops from the pass back
to the ocean, sparkling like a plate
of sapphires: Phryne
disrobed, in front of everyone,
let down her hair and waded in:
inspired Apelles to paint
Aphrodite
rising from the sea.

Do the reaction under nitrogen. We chained two acid traps to the end to catch the vapors. Pre-heat the oil bath. The reaction takes an hour. We could do 250 grams at a time. Roto-vac the hydrazide. Rinse the flask and vacuum distill with an iced condenser.

The river dry now, hard to find—
cement factories, the tall smokestacks
steaming, the marble pillars
of the Telesterion still lying
in the fields past the chain link fence—
smoke where incense was, dust on dust:
a cloud over Eleusis.

LSD had been created and abandoned, Hofmann seeking a cure
for migraine headache;

pharmacology, working with mice,
noted only "a certain restlessness"
and thought the drug not worth pursuing.
Five years later Hofmann had "a peculiar presentiment"
that something in recipe 25
had been missed—in Chicago,
the reactor went critical.

They offered wine to the grieving goddess.
She refused, instead requested
a mixed potion of water and white barley,
fresh leaves of *glechon*—pennyroyal.

Robert Graves
        sent a note to Wasson
that a mushroom cult
        might still exist
in Mexico, in the highlands
        of Oaxaca. Wasson
funded the expedition
        himself. The CIA
planted a mole.

Dissolve the hydrazide in tartaric acid, basify, and extract
with chloroform until you can't see any more lysergic
in the solvent with UV long. Dry the chloroform
and roto-vac. Store the lysergic hydrazide
in the refrigerator under nitrogen.
All this part in yellow light.

Iambe raised her skirt and flashed her butt;
she swirled her hips around and pumped—
no one could cross the bridge without some rude
licentious joke or gesture: men felt up and derided,
the women goosed. Sex
in the air like a mist.
We laughed and sang:

"Iakchos!   Iakchos!"

The Dance

Hofmann
set about synthesizing
a few centigrams of lysergic acid diethylamide.
He was careful, but had to abandon the recrystallization

of the tartrate salt when his mind was oddly
stimulated. He went home, lay down, closed his eyes,
saw the universe swirl, wondered what
could be the cause. The next day
he tried inhaling each of the solvents
he had used, then determined
to try a self experiment, figuring, back of the envelope,
what would be one-tenth
of a minimal dose, based on what he knew of ergot
alkaloids, took 250 micrograms of LSD25
on the 19th of April, 1943.

The mystai passed the rock where
the goddess had rested, where, weeping,
she had stopped at the Virgin's Well
and met the inhabitants of Eleusis
while sitting on a white sheepskin.

After two days on foot, by horse and mule, Wasson
reached Huautla. Mentioned the name
ˀnti^1 *xi*^{3} *tho*^{3}
to the constable, who stared at him a long time.

That night everyone danced:
girls played pipes and tambourines;
we held torches. The women
danced with the sacred cup
balanced on their heads.

In complete darkness, or dim red light, convert the hydrazide
to pyrazole under nitrogen with pentanedione.
Neutralize with sodium hydroxide and refrigerate the flask
to precipitate the crystals.
Vacuum dry for twelve hours.

On the night of September 27th, 480 BCE,
two Greek renegades, traveling with Xerxes,
reported that,
their countrymen all in flight, the Mysteries
were nonetheless performed, that they had seen
the white light break forth
from the Anaktoron; that the gods
had performed what men could not.

Do the amination in red light under nitrogen.
Dry the diethylamine just before you use it.
Heat on an oil bath for four hours.
You need high vacuum. Cook off the pyrazole.
Potassium hydroxide in methanol converts
the 'iso' to 'd'.

Late at night, we entered the sanctuary.
The priestesses
came in with the *kykeon,*
a measured portion
for each to drink.

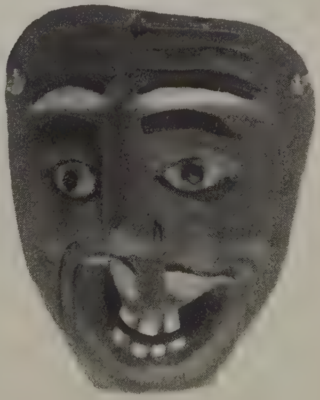
The Light Hofmann realized that his world was dissolving—left Sandoz
and rode home four kilometers
on his bicycle. He thought that he was dying, had his assistant
call his doctor, who, though puzzled, assured him
that all of his vital signs were normal.
After that he relaxed, and was moved
by a truth so simple, so obvious,
that the colors, tastes, the flowing sound and stars,
were only glitter.

"I have drunk the mixed potion"

We cleaned all the glassware as best we could,
then broke it all up;
took the pieces to the dump—couldn't risk
that some innocent might try
to use a piece of it
for a vase or something.

Alcibiades got busted, serving up the mysteries
socially, at a party at his home:
a capital crime which the Athenians,
needing his military skills, could never
carry out.

Hofmann succeeded easily
where the CIA had failed,
isolated the magic of the mushrooms
and in an act of shamanic
propriety, made the long journey
to Huautla, to present his molecules
to Maria Sabina.



The goddess gave her secrets
to Triptolemos, and he planted
the world's first grain
in the Rarian fields
below Eleusis, where
steel cranes and oil tankers
crowd the harbor at Salamis.

It took twenty batches. We should have done it in steps, converted all of the ergotamine to lysergic hydrazide first, then converted all of the hydrazide to pyrazole, and then just had the amination to do at the end, but once we had that first batch of hydrazide, we wanted to take it all the way through to see if the process was going to work.

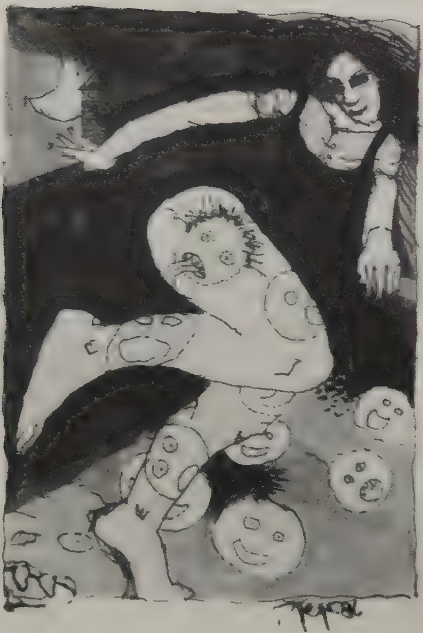
That was really a mistake, because then we had
a hundred grams of acid, and as careful as we could be it got
into the air, or into the glass, we never figured out.
It took two more weeks to do the rest.
We were high the whole time.
We made two kilos.

After two thousand years
Alaric, hordes of cavalry, miles of dust,
crossed through the pass at Thermopylae
with Christian priests.
The Old World was ending.
At fragrant Eleusis
the bright light was finally dimmed.

From halfway around the world, Wasson sent Hofmann
the seeds of *ololiuhqui,* the morning glory
chewed for visions. Albert,
analyzing, amazed, found the seeds
contained the same alkaloid already
in his laboratory: lysergic acid amide.
The mother-corn, *Tollkorn, die Taumelloch:*
the magic circle
was complete.

Whoever in this world has seen these Mysteries is blessed.

ENTR'ACTE



I was standing with her on the curb.

The people on the Holiness Bus were waving and calling for us to get on board, that they were leaving. Colors and a phosphorescent nectar poured out of the doors and windows.

"You guys go on," she laughed, "I'm going to stay here with the sinners."

"My kinda woman," I thought, and gave her a deep kiss on the lips. She had another mouth inside of her mouth, on the end of her tongue, with tiny lips, and a little tongue inside of that.

The bus was pulling away. "Just once around the block," I thought.

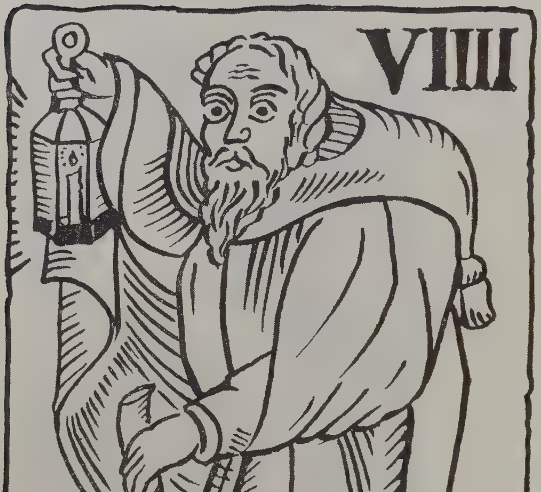
I grabbed a handle and jumped onto the back.

She waved and smiled.

On top of the bus it said "Love. Light."

I wondered if they'd throw me off.

They didn't.

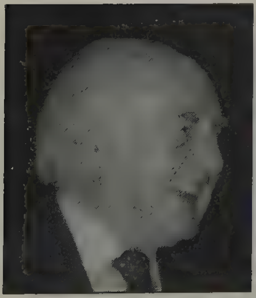

VIIII
ט

THE LUMINOSITY OF SENTIENT DIMENSIONS

> *Finally, we arrived at home safe and sound, and I was just barely capable of asking my companion to summon our family doctor and request milk from the neighbors.*
>
> *In spite of my delirious, bewildered condition, I had brief periods of clear and effective thinking—and chose milk as a nonspecific antidote for poisoning. . . .*
>
> *A demon had invaded me, had taken possession of my body, mind, and soul. I jumped up and screamed, trying to free myself from him, but then sank down again and lay helpless on the sofa. The substance, with which I had wanted to experiment, had vanquished me. It was the demon that scornfully triumphed over my will. I was seized by the dreadful fear of going insane. . . .*
>
> *Was I dying? Was this the transition? At times I believed myself to be outside my body, and then perceived clearly, as an outside observer, the complete tragedy of my situation. I had not even taken leave of my family. . . . Bitter irony: if I was now forced to leave this world prematurely, it was because of this lysergic acid diethylamide that I myself had brought forth into the world.*
>
> *—Albert Hofmann, LSD, My Problem Child*

Thus the great alchemist described the world's first LSD experience.

Hofmann has it all. Poison, *pharmakon*, medicine. Madness: *Mania theia*, divine madness, the source of our great blessings. Death, *Mortificatio*: the alchemical death, clearly here also shamanic death, complete with shamanic flight out of the body. And demons, and demonic possession. All the familiar elements of the poison path, there from its inception.



ALBERT HOFMANN

We're not denying love and light here, nay, far from it. But we have work to do. We need both worlds. One gives us the soil and the manure, the other our warmth and greenness.

None of the others are LSD. Not mescaline. Not psilocybin. Many share some of its properties, none share all of them. Pharmacologically it is the same. While the phenethylamines, if plotted on a graph of activity versus 5HT2 receptor binding, fall more or less on a line, LSD is almost off the chart, indicating a synergism of multiple receptor sites that is still not understood. (As much as receptor site binding can explain very much of what actually happens, which is not at all clear.)

> *My previous psychedelic sessions with psilocybin had opened me up to the sensory levels of consciousness, pushed consciousness out to the membrane frontier, contact points of eyeball and light, ear canal and sound. Psilocybin had sucked me down into nerve nets, into the somatic organs, heart pulse, and air breath, had let me spiral down the DNA ladder of evolution to the beginning of life on this planet. But LSD was something different. Michael's heaping spoonful had flipped consciousness out beyond life into the whirling dance of pure energy, where nothing existed except whirring vibrations, and each illusory form was simply a different frequency.*
>
> *—Timothy Leary, describing his first LSD trip, in High Priest*

LSD as a bridge between the old and the new: Old World, New World, Old Culture, New Age. And it settled into a literate, cosmopolitan culture, a machine age, in what poet Don Dachtler calls the "grease-on-steel" years. Into the Atomic Age. War years. In the cruelest of centuries. Found a home with the educated and the literate. This was new.

Tripping skills, gentle and iconoclastic. Consciousness had never been a traditional curriculum. Jaguars, yes, spirits, yes, healing, yes, and power—but not "consciousness." Nor "enlightenment" either. Nor "ego," nor "ego-death." Nor partying. Nor mind-control. Well, except for witchcraft.

◆

LSD settled into the era of materialism, a realm of science and rationality, the land of stimulants and alcohol. That alone made it revolutionary.

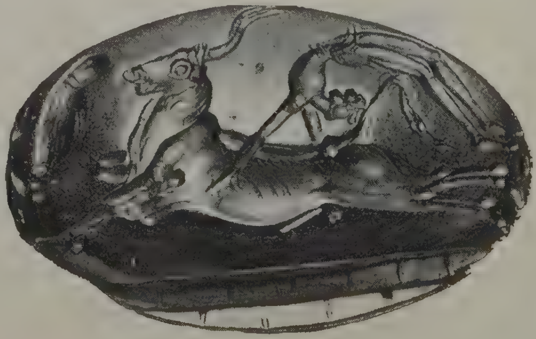
> *To begin with, this world has a different kind of time. It is the time of biological rhythm, not of the clock and all that goes with the clock.*
>
> *—Alan Watts, The Joyous Cosmology*

And there was a seeming fork in the path: one way eschewed the past, embraced the Future, the apocalyptic, the New Age, Aquarius, a new calendar, a radical rupture with history, messianic, into the heavens—space colonies.

> *Better living through chemistry.*

The other way turned to the earth, to the old ways, seeking models in pre-industrial cultures, tribe, tradition, anthropology, plants. Land.

◆



BULL LEAPER, 1700 BCE, CRETE

> *I met Timothy Leary and Richard Alpert at an evening at the Chues. . . Already Huxley's book (The Doors of Perception) had aroused interest. That a cool, scientific intellectual should describe a drug which gave dreams, fantasies, hallucinations, disclosed aspects of reality not observed before, intensified vision and observation and released the imagination, impressed Americans far more than the visions of Blake or the 'sur-reality' of the surrealists. Huxley was a scientist. These visions came from chemicals. They were controlled. There was no danger of a Rimbaud walking out of his poetic world. The interest spread. To one familiar with surrealism and with the lives of Baudelaire and De Quincey, this was not a startling novelty.*
>
> *—Anaïs Nin, The Diary, vol. 6, summer, 1963*

And there was the war. And the years passed and the war ended and we had children and our children are having children and the paths have come together, crossed, re-crossed like deer trails, twisted around climbing like a double helix.

And again there is a war.

For Modernism, birthed in African masks and absinthe and the Great War, LSD was the Grail. Alterity. Abstraction. The transgressor of boundaries.

> *"Make it new."*

A sacrament looking for a context.

> *And we thought*
> *we could remake the world*
> *into its sanctuary.*

(There was a hike up Lime Kiln, Big Sur, and all those days that passed and just passed and then hiking out and a beach at Gaviota and magical Desdemona and Gypsies who lived in train cars and there was Topanga and the moon ball and that stuff on the rocks that we finally decided was "angel shit")

> *We can refer further to what in hermeticism are called Corrosive Waters (or poison), in the special sense of substances capable of artificially provoking the dissociation between different elements of the human composition. The texts, nevertheless, either advise against the use of these waters and 'violent Fires,' or recommend the utmost precaution because, they say, they burn rather than wash; they dissolve bodies but cannot save spirits; they work not with the 'slow fire of nature' but with the 'impatient haste that proceeds from the Devil.' Their action is abrupt and discontinuous—so the difficulty of keeping them active in the changing state is all the greater.*
>
> *In this order of things, Greek texts have indicated the use of magic herbs—botanai. For the most part, we must refer to the ancient traditions concerning the 'sacred' or 'immortality-conferring' drinks, like the soma of the* Vedas, *the haoma of the Iranians, the mead of the* Eddas *and even wine itself.*
>
> *—Julius Evola, The Hermetic Tradition*

(There was swinging on the rings at Muscle Beach each one right where it needed to be and the dark streets of Berkeley and the witch and that crazy machine I jumped and laughed at and things were good in those days and people just gave us money sometimes and sometimes we had jobs)

> *When, in certain cults, intoxicating drinks were used to promote extra-ordinary spiritual states, it was not the intoxicating drink as such that produced the state in question. Its role could only be preparatory. The 'qualitative' impetus had to come from a different realm.*
>
> —*Titus Burckhardt, Alchemy*

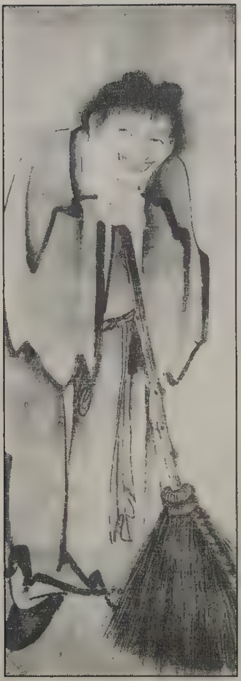
◆

TONIGHT AT THE MAGIC THEATER
FOR MADMEN ONLY
PRICE OF ADMITTANCE YOUR MIND

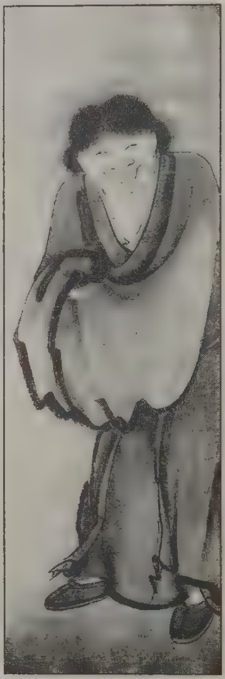
NOT FOR EVERYONE

◆

(There was wandering around in the LA Psychiatric where we'd found some door unlocked and what were we thinking except me I was thinking that they'd find us and keep us and little Gina riding on my shoulders and whispering all this kid stuff in my ear the whole time non-stop)



HAN-SHAN



SHIH-TE

> *It is a pleasure to me, my dear Harry, to have the privilege of being your host in a small way on this occasion. You have often been sorely weary of your life. You were striving, were you not, for escape? You have a longing to forsake this world and its reality and to penetrate to a reality more native to you, to a world beyond time. You know, of course, where this other world lies hidden. It is the world of your own soul that you seek. Only within yourself exists that other reality for which you long. I can give you nothing that has not already its being within yourself. I can throw open to you no picture gallery but your own soul. All I can give you is the opportunity, the impulse, the key. I can help you to make your own world visible. That is all.*
>
> —*Hermann Hesse, Steppenwolf*

The Ally

Things
I hadn't noticed.

The reflection

of the moving water
shimmering across
the undersides of the leaves
of the overhanging trees,

Things
I hadn't noticed

before—
too fast, too
preoccupied.

Orange dragonflies
skimming the water:

simple things.

◑

[Huxley] reminded me that drugs are beneficial if they provide the only access to our nightlife. I realized that the expression 'blow my mind' was born of the fact that America had cemented access to imagination and fantasy and that it would take dynamite to remove this block! I believed Leary's emphasis on the fact that we use only one per cent of our mind or potential, that everything in our education conspires to restrict and constrict us. I only wished people had had time to study drugs as they studied religion or philosophy and to adapt to this chemical alteration of our bodies.

[LSD's] value is in being a shortcut to the unconscious, so that one enters the realm of intuition unhampered, pure as it is in children, of direct emotional reaction to nature, to other human beings. In a sense it is the return to the spontaneity and freshness of childhood vision which makes every child able to paint or sing.

—Anaïs Nin, The Diary

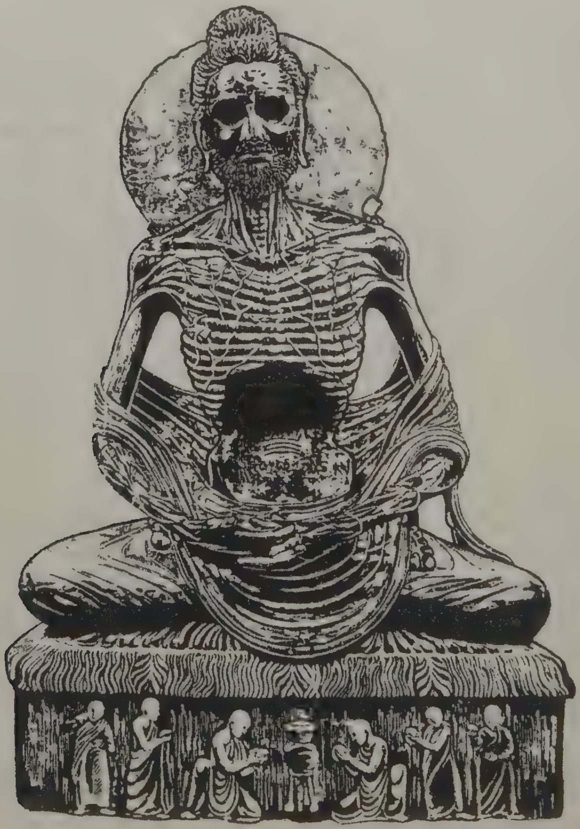
The Ally

Listening to Bach's Well-Tempered Clavier—so perfectly balanced.
Radical in composition, idea,
conservative in manners,
introducing everyone, letting everyone meet everyone else:
the essence of good culture, good family.

(There was a cliff house by the beach and all of us hugging and being schizo in Santa Barbara and discovering the Hand Oracle my hand just writing out answers by itself so I finally asked it so who is the one who is writing this?)

> *The second experience resulted in both a month-long, optimistic, glorious rapture which amounted to euphoria, and an amazing outburst of 'universal energy'; I felt inexhaustible, continuously fresh, and rested despite little sleep. A markedly noticeable increase in the appreciation of beauty followed the silkworm experience. Not only did almost any lovely object take on still more graceful lines, often becoming luminous and sparkling with jewels, but I could see beauty in hundreds of commonplace things I had not thought of as being even attractive before. Such emotions as tolerance, understanding, love for humanity, unity with all life, and awareness of God's nearness came with the first experience and were strengthened by each of the others.*
>
> *—Adelle Davis, Exploring Inner Space*

Poison.
Poison or medicine.
Acid as
the dogma dissolver.
The universal solvent.



Antecedents vanishing. "It" just becomes its own thing. It has no antecedent. A clear slate. It's not "getting rid of the ego," either, just listen to the blow-hards who talk that way. More a clarifying and strengthening, a letting go that lets it emerge more freely.

> *You will now, without fear and with unfeigned pleasure, enter our visionary world. You will introduce yourself to it by means of a trifling suicide, since this is the custom.*
>
> *—Hesse*

◆

The Ally

A time-stream flowing by, through. Carrying with it.
Schemes. Seductions.
Going fast, washing away fast.
Don't chase them, don't cling.
Let it go.
Me naked, white corpse.

Fetal position. Eyes closed.

Body parts, a severed foot,
a bloody leg floating by,
a singing head.

Mercurial ground, the tricky realm of the Alkahest, the Universal Solvent. The union of fire and water, the "water that produces trembling," the "Venom," or "Viper." The serpent that brings about separation.

◆

(There was psychedelic chess and love and our group and lots of stuff happened and some of us left and some came back and some didn't)

(There was deep in the Siskiyous hiking with a pack and just going and wanting to get away from everyone and doing that and that was ok too)

> *IF I AM GOING TO BE DEVOURED*
> *I WANT TO BE DEVOURED WITH CREATORS*
>   *I WILL NOT*
> *GO WITH ANY*
> *LESS THAN*
> *I AM*
>
> *—Clayton Eshleman, "The Moistinsplendour"*

"Ego-death," the alchemical dying process, a distinctive power of LSD. Some start grasping, choking for breath. Grof thinks it perinatal, a reliving of the birth trauma.

> *The principle in question, then, has a double meaning. It is Death and Life. It has the double power of solve and of coagula: it is the 'Philosophical Basilisk,' like a bolt of lightning burning all 'imperfect metal' (Crollius); 'Terrible Fountain,' which if allowed to run over would lead to ruin, but which confers victory over all things to the 'King' who knows how to bathe in it (Bernard of Treviso). . .*
>
> *What is of interest, however, is how we relate these symbols to a spiritual state under the guise of an experience: given that for hermeticism one must consider true what Aristotle said of the Mysteries, that perhaps one went to them not to learn, but to acquire a deep impression from a lived experience.*
>
> *—Julius Evola*

The Ally Here, into the depths of isolation, have you driven far enough?
Far enough now, O poisoner?
Are you alone enough?
Yes, yes, O poisoner, you who now have poisoned yourself,
this, all that effort, all that work and preparation,
bye bye, bye bye.
Bye bye, bye bye.

Dissolving. The phase of *separatio.*

Wading through it

up to our hips

A special joyous spiritual wig-out.

> *At that moment all life seemed so infinitely precious that I cried aloud. As I sobbed, I thought again, as I had many times before, that the visions of an LSD experience are relatively unimportant and merely serve as hooks upon which can be hung soul-shaking emotions.*
>
> *—Davis*

The Ally Such formal passings of history never seemed important,
passing thoughts, no need to notice, leaves, breezes,
Bach's notes flying by in the current.

Spiderwebs,
gonna inherit the earth,
or my cabin, anyway.

Breathing, this, so simple and so basic,
just breathing.

Everything that happens to you is what you are lacking
He who can embrace his antagonists is the happiest man
Give everything with greatest pleasure & thanks
Health is nothing but a good
equilibrium established between those two antagonistic systems
on
in

bough
out

—Eshleman, "The Moistinsplendour"

Wandering. Bardo. "The winds of karma."
Shape-shifting.

Face, mirror-work. Dissolve. Other faces, teachers,
"my precursors,"

> *I saw myself for a brief instant as my usual self, except that I looked unusually good-humored, bright and laughing. But I had scarcely had time to recognize myself before the reflection fell to pieces. A second, a third, a tenth, a twentieth figure sprang from it till the whole gigantic mirror was full of nothing but Harrys or bits of him, each of which I saw only for the instant of recognition.*
>
> *—Hesse*

◆

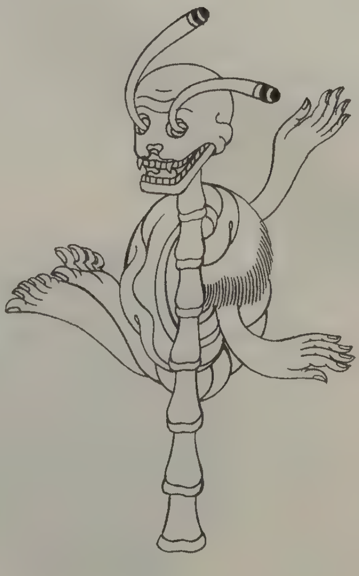
Skull, flesh rotting off,
A girl's face
A fox's face
Demons
Joker . . .

The Joker's a good man to see.

◆

How we used to say, if someone started crying, "She is having a religious experience." Tears were the mark. Tears of compassion. Tears of joy. Tears for all the pain swirling in the world, for one's own pain, long and half-forgotten but not gone, for all of the unnecessary pain that we inflict upon ourselves and others.

◆



TIBETAN JOKER

> *The next order to be filled was for tears. The problems in design and the variety of silks required were so numerous it seemed this time that my head would surely burst. I ate mulberry leaves at fantastic speed and increased my body movements to convulsive proportions as I spun cocoons and enacted all parts of the silkworm cycle. Opalescent tears for light cheeks must be produced, topaz tears for yellow skin, smoky topaz for Negroes, and a different shading for every race and variation of complexion. There must be tears that dropped, tears that flowed, tears that remained swimming in eyes, and scarcely born tears that must be wiped away with dainty lace-bordered handkerchiefs. I must make far more of the fabric for tears that fall at night than for daylight tears. Moonlit tears for the white cheek must glisten with diamonds; for the yellow and brown cheeks, with gold. Textures too had to be considered: special tears to flow down wrinkled cheeks or into unshaved stubble or curly beards.*
>
> *—Davis*

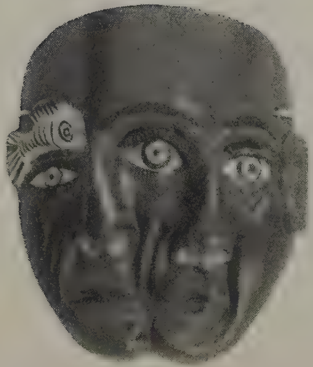
And tears for the stark, underlying, eternal beauty and love shining at the core of all creation, fabulous, told in tales, yet truer than our cynicism. Emptiness is not something out in space, not something found between galaxies, but a fact so intimate that tears are as appropriate as a quiet Buddha-smile.

GONE TOO FAR.
WON'T COME BACK.
INSANE FOREVER.
REALLY DYING.

Happens to everyone. Sooner or later.

> *When you're below the surface, never hurry to get out.*
>
> *—Dr. Robert Davidson, in Davis*

Now totally, hopelessly INSANE
Nothing to do but wait for the men
in the white coats
Sit
zazen
exhale



Sasha: "Maybe you should call it the Luminosity of Sentient Dementia."

DISSOLVE
ONLY ENERGY GREENISH GLOWING VIBRANT
ENERGY

Huxley saw lights. Glimpsed the mystics, Boehme, Eckhardt, and Asia. Watts leapt from Christianity to a Dionysian sensuality.

Ecstasy.

Utter overflowing.
The joyous throb at the heart of existence. Reality. Unreality.
Didn't matter. The joyousness is all.

The ecstasy.

& a certain sparkle.

Rapport to the point of telepathy. Willis Harmon tells a story of himself and three others traveling in a car. One man had to pee, but the rapport was so high they couldn't figure out who it was.

And healings. Self-healings. Allergies cured. Gary was hypersensitive to poison oak. I sat with him on a north-facing slope, thick with the stuff. It bent over us, the leaf-margins dripping sunlight, vaguely predatory and sinister. Gary snatched off a leaf and looked at it with a hint of disdain. Rubbed it on his arm. Ate a piece. He would push through it every day after that. He never got it again.

At a Dead show. Back muscles all knotted, shoulders, neck. Could hardly move my head. Sitting, eyes closed, finding a movement, tiniest movement of head, almost microscopic. Then finding the snake, the Serpent in the spine, cobra rising, head weaving, then standing up, more movement, head moving, shoulders moving, back swaying, shaking it out, finding all the pains, all the knots, shaking them out, out the arms, out the fingers, dancing it into the air, into the night, dazzling. By the end of the concert clear and clean, everything loose. A healing.

> *As magnificent silks meeting these qualifications filled the sky, sad faces of thousands of persons of every age and race appeared before me. I loved each so much I wanted to put comforting arms around every person, but I knew they needed solitude. Invisible to all, I put each tear in place with caressing tenderness. I gave transparent, pearl-shaped tears to a fat brown baby who lay watching a phosphorescent chameleon scurry among the fronds of a dried-palm thatch. After I had dropped them into his eyes, he stopped crying, and a smile covered his face. I knew that if more tears could fall, more smiles could follow; and I was saddened that the beauty of tears was so rarely appreciated. To me every tear showed the warmth, the humanness, and the alikeness of us all.*
>
> *—Davis*

For a Tear is an Intellectual Thing
And a Sigh is the Sword of an Angel King

—Blake

◆

Sitting cross-legged, everyone else sounding crazy to me, all talking at once, everyone finishing everyone else's sentences. Sitting, dissolve, pure light, a radiant phosphorescent glowing stuff, all gone, gone, way gone. The police knocked. Patti told me to do something. Answered the door, clarity, talked calmly, all well, all ok, and they left.

Loops, strange loops. Circles of thoughts that repeat themselves, new forms, but a pattern holding. Let go. Dance. Drum. Beat on a rock with a stick. Back to now. Back to now.

And the cosmic laughter, the laughter of ultimate absurdity, of the Great Cosmic Joke. That also was treasured. Telepathy was just accepted matter-of-factly.

Then there was Sam Born. Sam was a brawler. Big and burly, not a bad guy, if the aggression that stuck out of him like a pincushion of knives didn't freak you out. He and his buddy liked to take acid and go to bars and start fights. It was like his art form. "I could see all the moves. Who to pick on, what to say. None of them were fair fights."

The Universe, Reality, not what we think, but not not what we think (if you know what I mean). An infinite immensity. And a stillness, an emptiness, the Source, the source of the dancing. Not a dream, but inseparable from the Mind that dreams it. And a wiggling, a playfulness.

A paranoia loop—tight loop. Triggered by words, a thought,
turned from. And the turning from turned from.
Everything with levels of meaning, metaphor, symbol.
Signifying.
Reinforcing the thesis. A quick glancing over the shoulder.

WRONG

No, not wrong. Turn. Sit.
Come to rest.
Vocalize. Vowels. Rounded vowels. Back vowels.

OOOOOOOOOOOHH
AAAAAAAAAAHHH

And add some rhythm.

DISSOLVE
COLORS

> *All knowledge of self is knowledge of other, and all knowledge of other knowledge of self. I begin to see that self and other, the familiar and the strange, the internal and the external, the predictable and the unpredictable IMPLY each other. One is seek and the other is hide, and the more I become aware of their implying each other, the more I feel them to be one with each other. I become curiously affectionate and intimate with all that seemed alien. In the features of everything foreign, threatening, terrifying, incomprehensible, and remote I begin to recognize myself. Yet this is a 'myself' which I seem to be remembering from long, long ago—not at all my empirical ego of yesterday, not my specious personality.*
>
> —*Watts, Joyous Cosmology*

Faces become archetypes, Jon the Ancient Magus, Patti like an eternal, immortal Flapper, reappearing in each age of history, a priestess of a special hip sophistication equally at home in Classical Athens or expatriate Paris. Tarot cards. All of us incarnations of ancient deities.

> *They are at once unique and eternal, men and women but also gods and goddesses. For now that we have time to look at each other we become timeless. The human form becomes immeasurably precious and, as if to symbolize this, the eyes become intelligent jewels, the hair spun gold, and the flesh translucent ivory. Between those who enter this world together there is also a love which is distinctly eucharistic, an acceptance of each other's natures from the heights to the depths.*
>
> —*Watts*

The Ally

Hang with the dogs and the cat in the meadow, all together,
no cover for yards and yards, the dogs start playing,
the cat decides, ok, chase me, but not too fast, I'm
laid back today, but I'll act scared just to make it fun.
The whole mountainside swaying with the new weather moving in:
clouds, limbs of the fir trees, all interlocked in waves
of undulations.

Uncanny events. That nonetheless occur.

Al and Sharon were swimming in a lake in the mountains. Al was about to say something about how the surface of the water would pick up little patches of the sky when Sharon laughed and said "Here, catch some blue." And threw a piece of it to him.

At one point Bill closed his eyes. He found himself in an ancient temple in Yucatan. There was a lake outside, and something was moving in it. He knew it was a snake, and instantly he saw it: a large python. Later in the evening his friend Jim said: "Hey man, that snake in the lake was pretty wild."

Howard spent a whole trip focused on finding a phrase to bring "it" back. He wrote it down:

> *A finger pointing at itself.*

The Ally Beyond the forms, beyond all the enchanting and beautiful forms,
and beyond emptiness also, beyond the all-equalizing emptiness.

Home, home to the work of beings.
Return to the camp. Back with your visions, your empty visions,
all the unnecessary visions—
home, O wanderer, sew your body back together.
Sew together your heart. And bones,
your sinew, your brains, yes, brains, they are out there
somewhere.

Back to the Work, home, the Work
in the great swirl of it.

(There was the desert and the mountains and the Amazon and the hot springs and the Temple and the Acid Test and the Fillmore. There was a riot and prison and love and a broken heart and all that other stuff that everyone has to do all the time. There was a river and then actually there were several rivers)

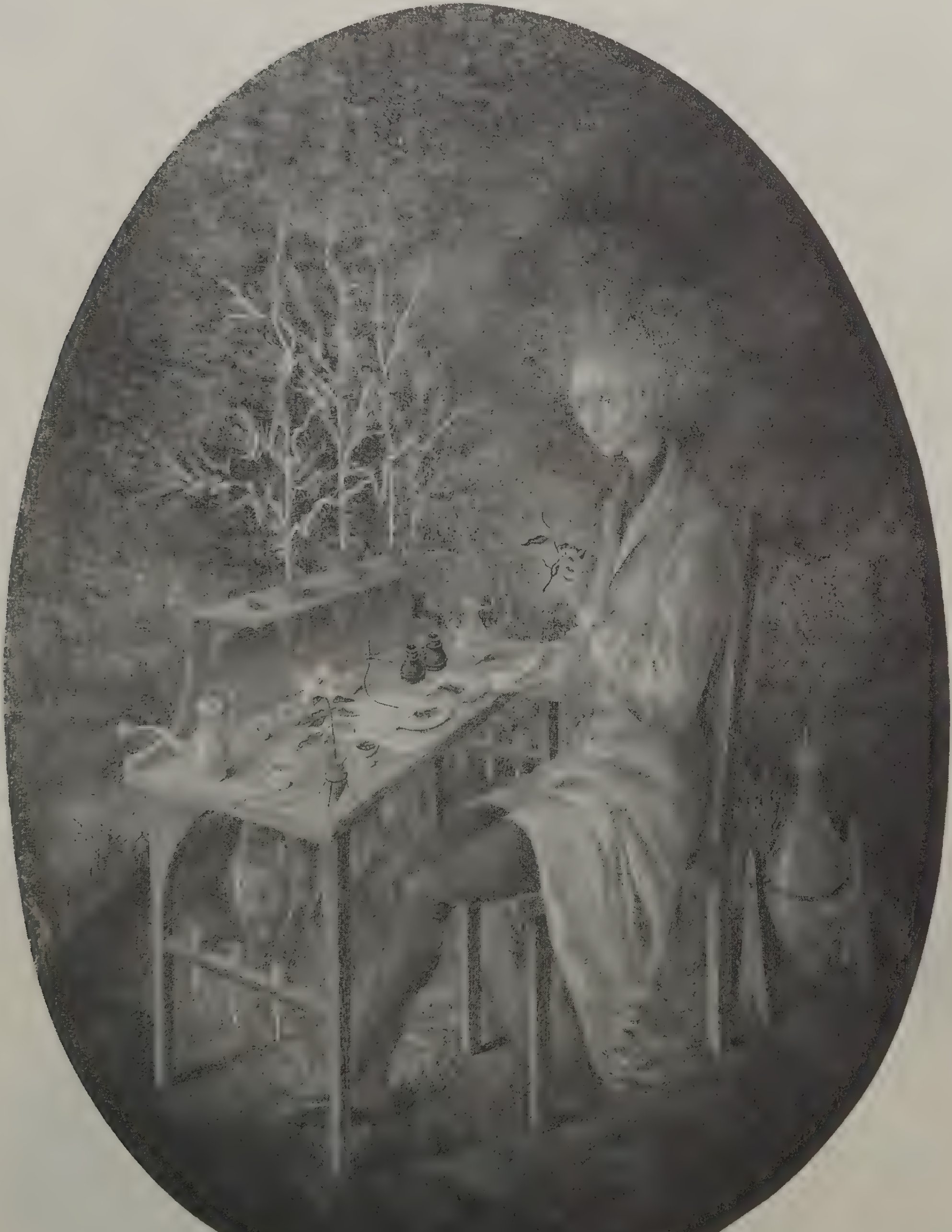
The Ally In from the Cold, O poisoner.
Come in from the cold,
collect these poor body parts, put them back together,
lover,
friends and family members guide us on the path,
our familiars guide us.

●

> *Within a week after my first sojourn into other worlds I noticed that I seemed to have two personalities: a pre-LSD personality in which my own feelings stayed dominant and to which I reverted under stress; and a post-LSD personality characterized by serenity, tolerance, optimism, and a forgetfulness of self. When the latter personality was uppermost, I could at times sense the feelings of others with an amazingly accurate intuition. The two personalities became more evident with each experience, but after a period of months they apparently became amalgamated and were no longer separately recognizable.*
>
> *—Davis*

●

The wonder of oranges. The wonder of melons. The wonder of laying with you, dear traveling companion, long spiraling journeys through our kissing, realms of color and light, new lands, new places. Bodies merging, our sexualities utterly opened and shared, merged, all of it a single orgasmic bliss.



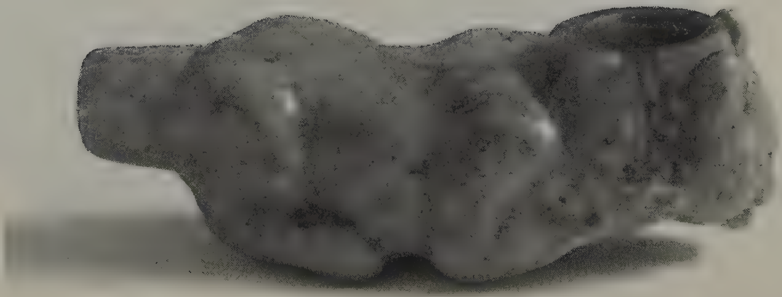
PLANTA INSUMISA, VARO, 1961

T*he* A*lly*

In from the cold, O poisoner,
come to the healing.
Come to the reassembling:
make a home for these body parts
in the great swirling stream of it.

Feed the body and warm it:
time for textures and clothing.
Birds quieting, cat purring, fur looks good.
Feed this body, feed this soul:
apples, fruits, cashews, almonds,
the cooling, dry air.

More truth in the singing, more truth in the singing,
than in the words.



The Ally

Dear N.,

We greeted Easter with a gift—the purity of which, in my opinion, hasn't been around for some years. Then L. saw a bobcat at the woodpile. It was huge. Its legs were like posts and its body all hips and shoulders. When the bobcat saw that L. had seen it, i.e. there was eye-contact, the bobcat walked across the driveway and up onto the knoll. It took us some time, even checking pictures on the internet, to convince ourselves that we hadn't seen a lion.

Now the knoll is a lovely wild area that we leave that way. It is "shared" domain—neutral that way—we go there, so sometimes does our cat, and so does everyone else.

The morning was filled with joy, fun, and adventure, but as time passed, and for reasons that I did not then fully understand, I felt a need to give some presence to the matter of the bobcat—even if just to look for a print, and I pulled clothes on, down vest, shoes, then, almost as an afterthought, some tobacco and a rattle—like I was off to do doctoring.

Mushroom, our cat, followed me out to the woodpile. There weren't any tracks that I could distinguish from the general glowing of the earth, but I became increasingly aware of the tenuousness of my position, *as a man*, in the present matter. I'd never called to a bobcat before, so I just made it up—I sang loud though—top of my voice, actually, and kept at it for a long time. I wanted to be sure he heard me. (I call it a song, but it probably sounded more like a bull having its throat slit.)

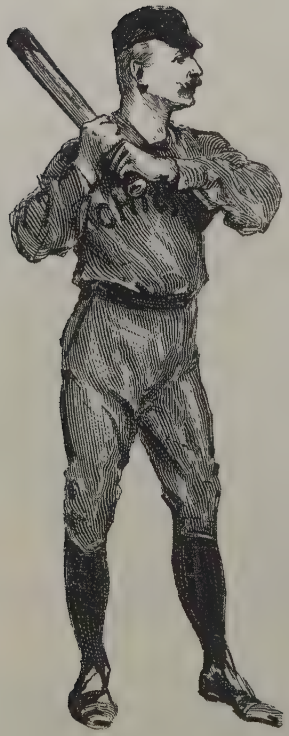
All this time Mushroom kept walking back and forth with her tail up, curled demurely at the tip, even a little coy, as if the matter under discussion were a date, or her bride price, like it was about her wedding or something, which it wasn't.

It seemed appropriate to meet on the knoll. "Ok, you send your guy, we'll send our guy." On the knoll I rolled tobacco, laid that one out on the ground, rolled another for myself and smoked. I was using the rattle and Mushroom was right between us.

Basically, he said "No deal." I would have expected no less. (I mean, what. . . kill a deer, offer a hind quarter?. . . the result would be the same.) The bobcat explained (though he didn't have to) how, inasmuch as I had taken the trouble to address him, as a member of the neighborhood, he had listened to everything I had said and understood the situation. "Your grandfather and my grandfather, used to meet up here. Over tobacco." Bottom line, though, no deals. Wild stays wild. You look out. I look out. Mushroom gotta look out.

After that I sang a song about blood and corn, and how everything and everyone that we love will die, and how even Orpheus could not change that.

Later on we listened to Pharoah Sanders—*Journey to the One*—and it was like, where to go after that? What could follow? So, after *not* being able to find *A Love Supreme* in the general chaos, I put on "Afro Blue" from the Japan album, and for the next forty minutes L. and I just gripped each other—or would call out—or were just suspended in the Land of Awe. Somewhere in there, I thought of you, warmly, and thus bid you these greetings.



"CAP" ANSON,
CHICAGO WHITESTOCKINGS

THE GREAT PSYCHEDELIC BASEBALL EXPERIMENT

In their dedication to science, three men determined to test the apparent "slowing" or "slow motion" effect of LSD empirically. The experiment was performed in a batting cage with a pitching machine. All three men were in their forties. We'll call them Mr. A., Mr. B., and Mr. C. Two of the subjects had played sand-lot baseball, and some baseball in high school. One, B., shamed by his predictable strikeouts in elementary school softball, had never before swung a bat at a hardball.

The experiment had been suggested by C. C. offered a hypothesis that, having experienced what he called "time-dilation" under LSD, it followed that with the aid of the drug one ought to be able to hit 80 mph fastballs more or less at will, and hence begin a baseball career even in the prime of life. B., delighted by the idea that he could do something to make his children proud of him, immediately signed on.

C. and B. visited the batting cage twice before the experiment proper, to establish control statistics on their hitting. During their first visit, each took forty-five pitches at 50 mph and thirty pitches at 80 mph. C. made contact with over half of the pitches at 50 mph, far fewer at 80 mph. B. hit pretty miserably, but loved the testosterone he could feel coursing through his body and determined to continue. Score was kept with strikes, fouls, "lames" or "grounders", and solid hits. "Lames" or "grounders" were fair balls on which one could get to first base as long as no one was playing infield.

A month later, when the two experimenters had recovered use of their arms and hands, they returned to the cage with A. On this visit only the 50 mph speed was available. C. made contact with half of the pitches, getting eleven solid hits and twenty-three grounders out of sixty-three swings. As A. was not going to participate in the ultimate experiment, no statistics were kept on his at-bats, but all remember him hitting easily and well. B. managed to connect with the ball only two or three times in all of his at-bats, perhaps intimidated by A. Discussion of this point revealed that B.'s older brother had been a brawny jock type, while B. had been a brainy nerd, and that A. was somehow representing in B.'s mind the petrifying presence of his older brother. Another month passed before the intrepid experimenters were able to return.

At eight o'clock on the morning of the third visit to the batting cage, C. swallowed 250 mcg of LSD, by best judgment. B. took 200 mcg of Swiss LSD, manufactured, according to impeccable sources, by a most reputable chemist, indeed. B. swallowed at 8:45 am. B. and C. spent a lovely morning wandering and hiking through the redwoods, and were then chauffeured by A., who was acting as ground control, to the stadium. The boys began batting at a little after eleven o'clock am. The speed was set to 80 mph. Madame M. accompanied the experimenters as a backup scorekeeper, as did C.'s young son.

A., who had not dropped, batted first. B. and C. watched wide-eyed. . . C. had been seeing trails anyway, before they went in. There had been some worry that the two psychonauts would break into so much laughter that they would be unable to complete the experiment, but this was not the case. It had been decided beforehand that each batter would take fifteen pitches, and then hand the helmet and bat over to the on-deck hitter. In practice, each batter took closer to twenty swings at a turn.

A. had only faced the slower speed before, and while he had shown some adeptness as a hitter at the 50 mph velocity, in his first at-bat at 80 mph he got only two hits out of seventeen thrown. In his later at-bats he adjusted and clobbered one of the best line drives of the day. However, A.'s hands were swelling so badly after his third at-bat that he had to switch to batting left-handed, at which he acquitted himself surprisingly well.

B. batted next. The air smelled of sweat, hot rubber, and the thumping wallop of the balls as they struck the backdrop. B. missed the first ten pitches completely. The next pitch struck B.'s right thumb rather painfully, convincing him that he was crowding the plate. Stepping back, to his great pleasure, he began connecting with the heavy part of the bat, and hit six of the next eight pitches. It was beginning to seem easy.

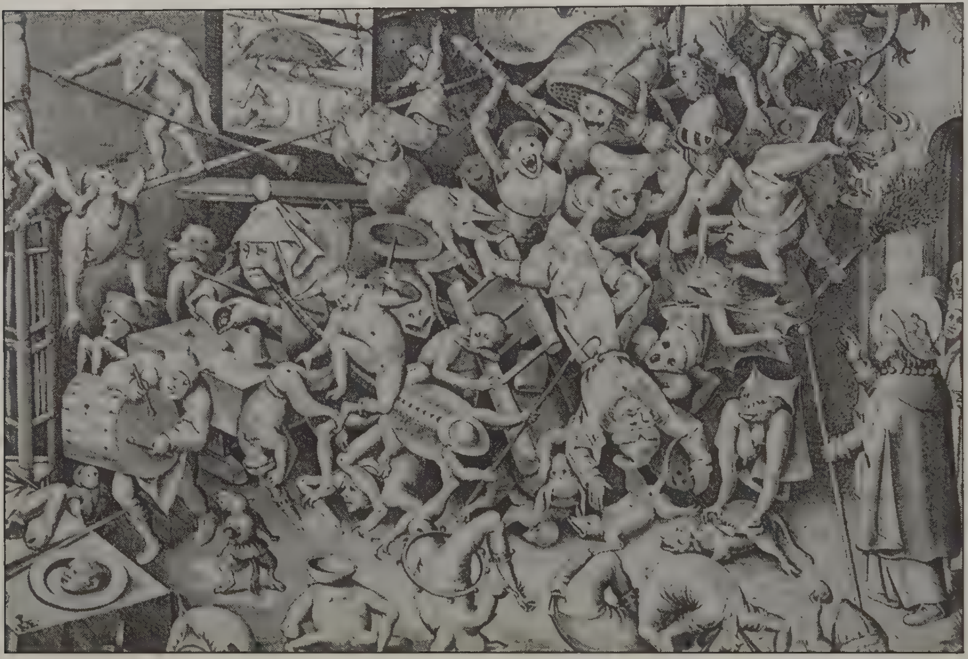
C., as B., took awhile to find the ball, but then started hitting. His batting record was comparable to what he had done on his previous visit against the 50 mph setting. And though the notes on his first batting against the fast ball were lost, reconstruction through memory and discussion support that his batting at 80 mph improved with the ingestion of the psychedelic, trails and all.

Both C. and B. agreed that speed was not the problem. In fact, B.'s main problem was swinging too early. This certainly supports C.'s time dilation hypothesis. C. said that it was all about concentration, that the problem was that the mind would wander off, would start musing, turning inward, or would get bored. When that happened you missed the pitch. Otherwise you hit it, if your arms weren't too tired, which happened surprisingly quickly. (For that reason, all agreed that long at-bats favored the pitcher.)

C. said that he would think of the ball as a woman, as a lover, a vagina hurtling towards him, but that even so, try as he might, he just couldn't get it up every time. B. liked that idea and tried it out and got a couple of satisfying socks. B.'s best at-bat was his last. At first he tried to copy A., batting left-handed, but missed every pitch. This got him mad. He uttered two four-letter epithets, crossed the plate between pitches, and proceeded to clobber the next seven balls, blistering his hands in the process.

C. believes that the game has to be made more significant, like it is a tyrannosaurus charging and not just a baseball, to really hold one's attention during the seemingly interminable at-bat. B. believes that if he had a regular masseuse and a dependable trans-Atlantic supply line he could quit his day job and start a new career. He is no longer intimidated by his big brother.

The rest of the day was lovely, filled with friends, laughter, wit, and beautiful scenery. By late afternoon all were ready for some frothy beers.



BREUGHEL, 1565

ON RESPONSIBLE USE

What does that mean, "responsible use"? The Millbrook model, rather than the Pranksters? Or the Clinicians? All three groups had casualties. Could giving a psychedelic to someone in a green room in a hospital be called "responsible"?

Let's reserve "irresponsible use" to refer to the way LSD was used by the United States Army, and the Central Intelligence Agency. They gave it to unprepared subjects, without their knowledge or consent. They callously watched their victims through a one-way mirror—and never intervened to explain to their dosed and usually panicked captives that they had been given a drug, that they were not going insane, that in reality they had been kidnapped by a mind-control research team.

Very well, you say, but what about the unprepared? What about those who have never tried it before. The virgin, the newbie. There are no guarantees, after all.

If you have read this far, you are to be numbered among the *prepared*: all you need is to take the plunge. Besides, again, if you've read this far, you deserve what you get. You deserve to see heaven and hell. You deserve to wander through the six realms of the intermediate bardos, to find, in fact, that you are not only the star actor, but the entire audience and the complete subject, author, and director, that there is no way out, until you feel a hand on your shoulder.

You deserve to walk about in a world where mere thoughts and whims change the colors and contours of physical space. Where, when even the question of "what is meant by 'physical space'" flashes through your mind, your friends instantly turn to you and ask: "How did that happen?"

You deserve it. You deserve to suddenly find yourself in the world the old sorcerers knew—to learn for yourself how bad vibrations can be grounded through a large crystal, how chimes of different tones affect tint and skin temperature, how the different vowel sounds connect to which birds will answer back.

You deserve to see the hell realms also, you scoundrel—to experience first-hand the loop-eddies: how karmic chains can close on themselves, reinforcing their own sinister cycles. What it really means to not know who you are, or which reality you are in, and to give up on ever regaining your sanity.

You deserve some bliss also—pure vibrational being-ness in the green part of the spectrum. Yes, and a traveling companion, and transcendental, astral sex—the hyper-tantra where whose is which and flesh and dream become inextricably intertwined, blurred, blended, and revealed.

You deserve to see the heart of existence, the essence of All, or Ally, or is it? It's kind of that, that's happening, but how can you say it? Because it's the happening OF it, not "it," as such (if you follow).

Here's to you, fair traveler. Find the New World. Eat this page. Pop a ten-strip and go deep. Five hundred mics is a good round figure. Angels are singing. Wade on in, up to your hips in the bum-buzzie of solar meat cream. Let the oracles come alive again, not like something you read about in a book, but an actual cave that speaks, that will answer questions.

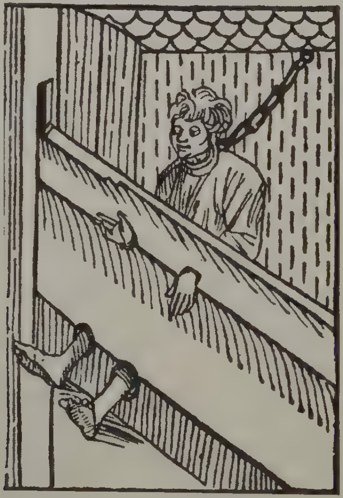
You deserve it. To learn that your eyes have a microscopic ability, that your hands can be sculptor's hands, that you can understand Debussy, and follow his wry twists. How the tracts and esoterica of the alchemical philosophers are straightforward trail notes, to which you can add commentary.

You deserve it. Sure you do. Devote one trip to architecture, strolling Manhattan. Devote one to rhythm, the higher language of tempo and caesura, the beat, and the primal beat, the primal beat indistinguishable from the origin and essence of the world. You deserve such joy! You deserve release from so many years of encrusted cynicism. You have worn your pain as a hair-shirt, a burden-basket tumped and creased on your forehead. Lay it down. Give it to Jesus. Give it to Buddha. Give it to the great psychedelic Earth, and let the Earth respond and accept you just as you are.

You deserve it.

(And now, O Arbiters of Responsibility, what do I deserve?)

(A flogging, I'd say.)



DÜRER (DETAIL), 1489

MESCAL BEAN: SOPHORA SECUNDIFLORA

The Plant

The term "mescal" is also applied to peyote, *Lophophora williamsii*, as well as to the distilled liquor of fermented Agave. Some of the confusion between mescal beans and peyote ("mescal buttons") may stem from the use of mescal beans as a shamanic and ritual intoxicant by the Plains Indians, a practice that predates the appearance of peyote in those parts. Also, the natural ranges of *Lophophora* and *Sophora* are nearly congruent, with the range of *Sophora* somewhat larger and extending farther north. *Sophora secundiflora*, with its strikingly beautiful and spectacular pendants of lilac blossoms, is an indicator plant for peyote. Peyote plants are often found beneath the mescal trees, the partial shade of the shrub providing some extra hospitality for the cactus.

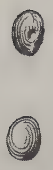
Caches of mescal beans at least 10,000 years old have been found in caves in the Rio Grande and Pecos area, indicative of ancient shamanic use. At one site, a large rock shelter called the Fate Bell Shelter, *Sophora* has been found at every level, spanning an 8,000 year period from 7,000 BCE to 1,000 CE. (Peyote has also been found in the trans-Pecos caves, in association with *Sophora secundiflora*, but only in the upper layers, dated circa 1000 CE. Much older peyote has been found in northern Mexico.)

The beans are toxic, containing cytisine and other quinolizidine alkaloids similar in action to nicotine. Through acetylcholine receptors, cytisine can produce nausea, convulsions, a numbing of the limbs, hallucinations, unconsciousness, and death through respiratory failure. Cattle and sheep can be poisoned by eating the leaves, which also contain cytisine. Alice Marriott (1971) states that even the fragrance of the blossoms is toxic, and can overcome a driver who has been foolish enough to transport a bouquet of the flowers in an automobile. Others state that a single bean can be fatal if eaten by a child. However, according to the *AMA Handbook of Poisonous and Injurious Plants*, serious intoxications are rare, and most poison centers list mescal beans as only mildly toxic. *Sophora secundiflora* is sometimes called "mountain laurel," though that name more properly refers to the genus *Kalmia*, an entirely different plant in a different family.

The hard red beans, which can dry to be partially or wholly black, are also confused with the very similar-looking beans of *Erythrina*, some species of which contain alkaloids with curare-like effects. *Erythrina americana* is reported to contain cytisine, as well as indole alkaloids (Rätsch, 1992). Rätsch reports that the beans were used for divination, as a drug for producing dreams, and as an aphrodisiac. Cytisine is also found in broom, *Genista* spp., and possibly *Cytisus scoparius*. The presence of cytisine in many lupines (*Lupinus* spp.) may explain the shamanic use of lupine by certain tribes in California and in Alaska. Cytisine is also found in the golden chain tree, *Laburnum anagyroides.*

Information on the shamanic and visionary use of *Sophora secundiflora* is hard to come by. Some reports state that one-half of a crushed, powdered seed was a dose. Sometimes a drink was made by boiling the beans, then taken as an emetic as part of the first-fruits ceremony.

In Mexico the beans are called *frijolillos*, and their use by Mexican Indians in the eighteenth century was enough of a concern to the Catholic priests that use of the beans was asked as part of confession.



BEANS,
J.B.CLARK

> *Have you eaten of the frijolillos?*
> *Did you become intoxicated?*

Hast thou eaten of the tree, whereof I commanded thee that thou shouldest not eat?

Coahuila shamans use the mescal beans as an intoxicant at communal dances, suggesting possible aphrodisiacal properties, as well as for visionary purposes. The Tarahumara added crushed mescal root to a fermented maguey drink.

North of Mexico, the bean was used for vision quests on the Plains, for seeking power from animals. Among the Caddo, the Pawnee, and the Wichita, the beans were used for hunting power and for war. Many Plains tribes had mescal-bean cults in historical times, including the Apache, Comanche, Delaware, Iowa, Kansa, Omaha, Oto, Osage, Pawnee, Ponca, Tonkawa, and Wichita tribes. These Red Bean Societies used the bean to gain visions, power, and the songs necessary to become medicine men.

Sophora seeds have been used by tribes as far south as the Tarahumara, and as far north as the Cheyenne, to prepare an eyewash, and for earaches. Wichita runners would eat mescal bean before races, much as the Tarahumara, for the same purpose, chew a little peyote.

Class

Mescal bean is not really a hallucinogen, and belongs with tobacco in *thanatopathia,* or with the deliriants in *daimonica.*

The Ally

A poet I know, Philip Daughtry, once swallowed a mescal bean, on the middle fork of the Yuba River. He swallowed the bean whole. Or maybe he chewed it just a little. After awhile he began to get uncomfortable. He started feeling bad. His legs began to cramp and his stomach felt distended.

> *I felt like I'd eaten a pound of sand.*

Cold fluids began leaking out of his intestines. He thought that he was hemorrhaging inside, that his blood had turned icy and that blood was leaking out of his rectum. It got scary. His leg muscles wouldn't work. Then it stopped. And he melted into the river. And the Riverman came into him.

> *Ummmm, me Riverman now.*

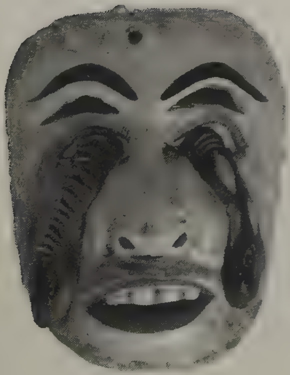
> *Pretty good. Riverman now.*
> *Been Riverman a long time.*
> *OK now. OK now.*
> *Been a long time now. Long time now.*
> *Ummmmm. OK. Riverman now.*
> *Riverman knows. Riverman knows.*

Everything became fluid. Sensuous. He became the river. His tactile senses were so heightened that he took his clothes off. The Riverman took over.

> *It wasn't like acid or peyote. There was no distortion. There was no rational intellect. No complication. Very physical, very sensuous. I could move over the rocks completely silently and fluid. And through the grass and the brush. It was like I was an animal, very mammalian. I could be quiet and invisible. I didn't care at all that I didn't have any clothes on. I was the Riverman.*

The Riverman. Slithering over the boulders. Moving upstream, talking Riverman, a new voice, Riverman poems, Riverman phrases repeated over and over. No way out.

And of course there were people all up and down the river—picnickers, fishermen, skinny-dippers. Coming up to them and talking that Riverman talk, the Riverman rhythms. . . Some of the people walked away. Some of them ran.



> *I came over a boulder and there were these three naked girls. Usually you kind of give them some berth and just walk on, river ethics. But Riverman walked right up and sat down in the middie of them all naked and talking this outrageous talk.*
>
> *Hmmmm, Riverman here now.*
> *Ummmm, elephant pussy here.*
> *Ummmm, Riverman say OK.*
>
> *Elephant pussy. Pretty good.*
> *Riverman, he old, but he OK.*
> *What you say? Riverman know.*
>
> *Just talking like that over and over. But somehow it enchanted them and they weren't scared. I just kept walking like that. I broke off a willow sapling and stripped off all the leaves except for the ones at the very end. Then I'd dip the end in the river and I could flick drops of water anywhere on my body that I wanted to. It was like my tail. I kept it all day.*

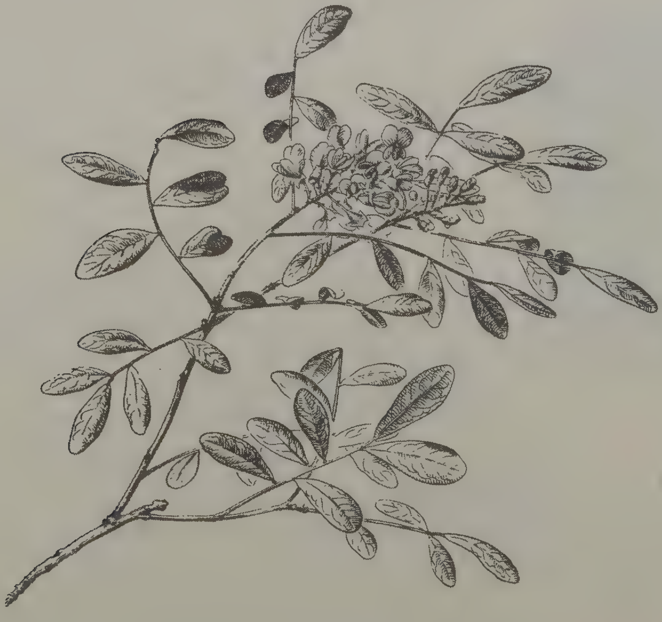
Philip had left his buddies way downstream. They were scared anyway. They thought he'd gone crazy. They didn't know what to do. Philip thought he'd gone crazy too.

> *But I liked the Riverman. And I liked the way I felt. My libido was stronger than it had been in years. My body felt so good. I liked the way I could move. I could be silent. I could flow. I got kind of tired of the Riverman talk. He had a very limited vocabulary, just kept repeating the same stuff over and over. But I liked the Riverman ok.*

> *It was so sensual. Ecstatic, but steady. I got a hell of a sunburn. I had no appetite and no thirst. The river was like it was alive, like it was an animal, this beautiful silvery animal that was responsive to me. It was an ally, a friend.*
>
> *My buddies were afraid to take me home to Susan. Like, "here's your husband back, he's crazy now." I tried to stay away from her. Some of it she thought was funny.*
>
> *It lasted for two full days. I didn't sleep at all. I couldn't stand being indoors, or in bed. The blankets felt rough, too rough to be on my skin.*

I remember Philip from the Riverman time—there was something charming about the Riverman, and something wise and ancient—a Paleolithic clown spirit. It could get a little repetitive, though.

> *I was scared but I liked it, I liked the Riverman. But I was scared that I was permanently changed. My friends were getting pretty scared. But still I liked the way I felt. I was sad when the Riverman left, when I looked in the mirror and saw Philip. And man, did he look bad. He looked pretty bad after those two days, Philip did.*
>
> *That was fifteen years ago, but I can still call up the Riverman every once in a while. He can still make me laugh and make me feel good.*



SOPHORA SECUNDIFLORA, J.B.CLARK

PEYOTE: LOPHOPHORA WILLIAMSII

The Ally

It is good that you are here. I ask the Creator to help the right things to come to you, in a good way. I pray that no bad accidents befall you, and that if you see or hear something here that moves you, if something here touches you, that you will use it in the right way—that the blessing may be passed on to your loved ones and to all your relatives and to your co-workers at your job and to all those people that you touch with your life, that it benefit the earth and all beings. That is what we do here.

Common Names

Peyote. *Peyotl* in Nahuatl. *Hikuli*, or *hikuri,* to the Tarahumara and the Huichol. *The Medicine*, to those on the Road.

Class

Phantastica. The first such known to the West. The type for the class.

Taxonomy

Lophophora williamsii is a small, spineless cactus that grows in the Chihuahuan desert from San Luis Potosí, Mexico, to the Rio Grande.

North of the Rio Grande, it once was found from Big Bend almost to the Gulf of Mexico. Today, peyote's range is largely restricted to two counties—mostly as a result of habitat destruction—and over-harvesting has become a serious issue. Large ranches in the peyote-growing area of Texas have been root-plowed for cattle grazing, or are fenced off as private hunting preserves. The problem is exacerbated by misguided laws prohibiting the cultivation of peyote.

Anhalonium lewinii, named for the German toxicologist, is now considered a synonym for *Lophophora williamsii*. A related species, *Lophophora diffusa,* grows in a southern population in the state of Querétaro, Mexico.

A number of other cacti besides peyote contain mescaline—the *Trichocereus* genus in particular. Other genera with mescaline-containing species include *Pelecyphora, Islaya, Pereskia, Gymnocalycium, Opuntia, Myrtillocactus, Polaskia, Pterocereus,* and *Stenocereus,* though none in useful quantities.

As a family, the Cactaceae are *xerophytic*, adapted to aridity, probably a response to the drying conditions throughout much of the western North America during the Miocene. The spines so characteristic of the family are modified leaves.

Peyote is often miscalled "mescal," an early confusion in the United States and Europe that has persisted in the name of its principal alkaloid. "Mescal" more properly refers to the seeds of a legume, *Sophora secundiflora,* or to a tequila-like beverage of distilled pulque, made from the agave plant. Weston La Barre speculates that mescal beans may once have been added to pulque. Some say they are still.

Part Used The whole cactus, or just the top.

How Taken The tops, or sometimes the whole cactus, is eaten fresh. Or dried into "buttons." Sometimes the buttons are ground into a powder and swallowed, or made into a tea, or a paste. According to several anthropological reports, peyote is sometimes taken as an enema.

Effects The effects begin in one to two hours, and may last for over twelve.

Peyote, Uses

EXTERNALLY, AS A POULTICE FOR WOUNDS, SORES, GOUT, AND ACHING JOINTS. SEVERAL MODERN REPORTS REFER TO ITS USE FOR SNAKEBITE, SKIN DISEASES, TOOTHACHE, AND AS AN EYEWASH. THERE ARE AT LEAST TWO CLAIMS FOR PEYOTE CURING BLINDNESS;

INTERNALLY, AS A FEBRIFUGE, GALACTAGOGUE, CARDIAC TONIC, AND PANACEA; FOR CONSUMPTION, HEADACHE, AND CHILDBIRTH;

AS A VISIONARY ALLY;

AS A STIMULANT FOR WARFARE, LONG-DISTANCE RUNNING, AND OTHER PHYSICAL EXERTIONS;

AS A DIVINATORY AID, FOR MEDICAL AND SPIRITUAL DIAGNOSES, TO FORETELL THE FUTURE, AND TO FIND LOST OBJECTS AND PEOPLE;

CEREMONIALLY, FOR PRAYING AND DANCING;

AS A GOOD REASON FOR PEOPLE TO GET TOGETHER AND ENJOY EACH OTHER;

AS CRYSTALLINE MESCALINE, A SPIRITUAL MEDICINE FOR INTELLECTUALS.

According to Dr. Stacy Schaefer, studies made on the Huichol comparing peyote users (who may ingest the plant thirty-five times a year) with non-users, found no chromosome damage among the users.

The Plant The peyote story follows three main threads: through Mexico with the Huichol and the Tarahumara; through the rest of North America with the Native American Church; and through the European tradition via mescaline.

It is highly likely that peyote has been used by the various peoples living or migrating through the area of its natural occurrence for ten thousand years. *Lophophora williamsii* has been found in a cave near Coahuila, Mexico, dated to 8500 BCE, along with beans of *Sophora secundiflora* and *Ungnadia speciosa*. Archaeologists have found a "necklace" of dried peyote buttons in a cave in northern Mexico, dated to 800 CE. The peyote buttons were strung like deer jerky, the same way the Huichol do today. This same site yielded two peyote plants reportedly radiocarbon dated to around 5000 BCE, making peyote the oldest hallucinogen known to have been used by human beings. Artistic representations of the peyote cactus, on mortuary ceramics in western Mexico, date from 100 BCE and indicate that peyote has been an item of long-distance trade for at least two thousand years. As explained in the Notes, none of these dates are very solid.

* * *

History, Mexico

Our historical record of peyote begins with the conquest of Mexico.

The Ally

> *Grandfather, this is so silly. It has to do with writing and records—not with the real history—how you revealed yourself to the Chichimecas, and to how many before them? How you revealed yourself to the Huichols, and showed them a way to create harmony between the three worlds.*

The Plant

The Aztecs called the plant *peyotl,* of debated etymology but sometimes glossed as "shimmering," from the silky hairs. The same word was applied to several different plants, not all of them cacti, not all of them psychoactive, and not all of them silky or woolly. Many anthropologists refer to "Aztec use of peyote" in passing, but actual references or attestations are hard to come by. Most of the evidence seems to be inferential—that peyote was used by neighboring peoples. Some of the problem is what is meant by "use," and what is meant by "Aztecs." Does "use" include non-visionary use, military use, and partying? And does "Aztec" include the Chichimeca, the peoples of Guerrero and Oaxaca, or the long-distance traders, the *pochteca*? While La Barre has several passing references to Aztec use of psychotropic plants, often including peyote in the list, he states clearly in *The Peyote Cult*:

> *The ritual use of peyote failed to penetrate the pueblo Southwest or the Aztec, both strongholds of priestly religion; perhaps the stereotyped institutional rituals of these regions stifled such orgiastic individual emotional experiences as peyote is calculated to induce.*

However, in Appendix 4 of the same book La Barre refers to special Aztec officials who took *ololiuhqui*, which he incorrectly glosses as "seeds of datura", for purposes of divination. Richard Townsend, in his book *The Aztecs*, also refers to "certain priests" who engaged in prophecy using psychotropic plants, and lists jimson weed, *Psilocybe* mushrooms, and peyote cactus buttons as possibilities—unfortunately without a reference. As it is noted that these "certain priests" were paid for their services, it seems probable that they were private "soothsayers," common enough in the ethnically diverse Aztec capital, rather than part of the Aztec hierarchy.

The situation may have been akin to that of Shang China, where a few court shamans still coexisted with the increasingly Confucian nobility. The official Aztec priests were rigorously trained from childhood in a kind of priestly boot camp where fasting, celibacy, austerity, bloodletting, and physical privation seem to have been the most admired values. Losers of the various races and examinations were weeded out and dismissed back to their families. The graduating priests functioned variously as scribes, as teachers in the schools, as astronomers and astrologers, as managers of the local temples and ceremonies, or as chaplains for military expeditions. And, of course, there were the sacrificial priests, with their uncut nails and blood-matted hair, who, it seems to me, would most have wished for something to deaden the smell of the putrefaction and the buzzing of the flies.

Drunkenness could be a capital offence in Tenochtitlan. The ambivalent attitude of the Aztec nobility to inebriation is apparent from one of Sahagún's informants who characterized the "bad noblewoman" as one who "goes about besotted; she goes about demented; she goes about eating mushrooms." Likewise, while the "good youth" is characterized by various virtues of Spartan sobriety, the "bad youth goes about crazed on both kinds of *Daturas* and mushrooms." Clearly enough, while hallucinogenic plants were easily available in the Mexica capital—and it is known that peyote was an item of commerce in the marketplace—their status in the official culture, at least as inebriants, seems vaguely equivocal.

The main use of peyote was as a medicine. Like every human society that has ever existed, the Aztecs had to deal with physical and mental illness in their population, and a class of specialists emerged. Doctoring may have been one of our first specialized professions. Aztec medicine is too large a topic to discuss here in any detail, but, in brief, it was a holistic system involving body, several souls, and a complete system of correspondences between plants, gods, and bodily organs. Illnesses were either natural or supernatural, or both. Peyote, like several other "hallucinogenic" plants (*Psilocybe* spp., *Datura* spp., *Rivea* spp.), was used externally for gout, and internally for "aquatic fever," sometimes as an enema. The Aztecs were also aware of peyote's effectiveness in treating wounds. The Tlaxcalan forces that accompanied the Conquistadors used peyote to allay fatigue on long marches, a usage also found among northern tribes such as the Tarahumara on their long runs, and there is no reason to think that the Aztecs didn't do likewise.

As they always had been in Mesoamerica, peyote and other hallucinogenic plants were used extensively for divination throughout the Aztec empire. Ruiz de Alarcón records many such instances in Guerrero, along with accompanying spells and incantations. That such was also the case in Tenochtitlan is evident from one of Sahagún's Nahuatl documents distinguishing the "true" doctors, who used empirical data to find their cures, from the "false" doctors, who used soothsaying, fortune-telling, and "noxious" herbs. Except for Alarcón's recordings of spells and divinations, the bulk of our knowledge of Aztec medicine is of the former sort—though this may be an error of omission by Sahagún. Both Sahagún and Hernández mention the use of peyote for divination by the Chichimecas.

> *Miraculous properties are attributed to this root (if any faith may be given to what they commonly say among themselves). To wit, that those who eat it will be able to foresee and predict everything, such as whether they should attack the enemy on the following day or rather wait for favorable times; or who had stolen a utensil, or other matters of like nature which the Chichimecas attempt to find out with the*

> *help of this plant. Furthermore, if they wish to know where they would find this root hidden in the ground, they eat another one of them and would find the place.*
>
> *—Francisco Hernández (1515-1587)*

Hernández and other scientifically-minded botanists may have had doubts as to just how "miraculous" the properties of peyote were, but the Holy Office of the Catholic Church did not. For the Holy Church, miracles were not in the least unbelievable, quite the contrary. The problem was the nature of the miracle—miracles could be good or bad. And the miracle of divination, an art that the Christians had lost over the first several centuries of their existence, was on the "bad" list. Note that if divination were not seen as being effective, the Church would have had no case—it would just be Indians indulging in superstitious delusion, which was not a criminal offence.

It was that the diviners (according to the records) really *were* able to find lost objects (or runaway wives, or the cause of an illness) that proved its diabolical nature. Anyone who participated in such a divination was therefore considered to have made an implicit pact with the devil, whether they were aware of it or not. An edict of 1620 specifically condemns the use of peyote to find lost objects.

Again, only the alleged presence of the Devil gave the Inquisition and other ecclesiastical and secular bodies the authority to prosecute cases of peyote use. This is why the Church rejected the argument of a physician named Juan de Cárdenas, who published a book in 1591 claiming that the effects of peyote were due to its botanical and pharmacological properties, not to anything having to do with the Devil.

> *It is completely false to say that the herb out of its virtue makes the devil appear. In the second place, to say that, due to the virtue of the herb we know of things to come or secrets that have occurred, it is a notable error that the devil says or declares this. . . as in effect was told and declared in ancient times by the mouths of the oracles, those false gods, but that the herb out of its virtue could make either one of these things, I have it as a falsehood and lie.*
>
> *—Juan de Cárdenas, 1591*

Cárdenas described the actions of peyote in some detail, noting changes in perception, the production of visions and dreams, and a subsequent unquiet sleep. All of these effects he explained as the movement of humours and "fumes" from the intestine to the cerebrum.

The Church persecuted peyote users wherever they could find them, thus peyote rituals only exist in Mexico today among those tribes, such as the Cora, the Tarahumara, and the Huichol, that were able to retreat to rugged and inaccessible terrain to avoid the Spanish "drug warriors." In a manual listing questions that priests should ask of Indian penitents, the question "Have you eaten peyote?" follows "Have you killed anyone?" and "Have you eaten the flesh of man?"

> *Art thou a soothsayer? Dost thou foretell events by reading signs, or by interpreting dreams, or by water, making circles and figures on its surface? Dost thou sweep and ornament with flower garlands the places where idols are preserved? Dost thou know certain words with which to conjure for success in hunting, or to bring rain? Has thou drunk peyotl, or hast thou given it to others to drink, in order to find out secrets, or to discover where stolen or lost articles were? Dost thou know how to speak to vipers in such words that they obey thee?*
>
> *—Fr. Nicolas de León, Camino del Cielo*

After four hundred years, the persecution of those who use psychedelic plants or substances or who smoke marijuana still has a religious fervor. (A man in Virginia was recently sentenced to four hundred years in prison for selling hallucinogens!) "Drug" users, to these religious fanatics, are *worse* than criminals, they are heretics for whom no punishment is too severe. Somewhere, nailed to a cross and wearing a crown of thorns on His head, a tear must fall from Jesus' eye.

◆

The Ally

> *For there is in consciousness a Magic with which one can go beyond things. And Peyote tells us where this Magic is, and after what strange concretions, whose breath is atavistically compressed and obstructed, the Fantastic can emerge and can once again scatter in our consciousness its phosphorescence and its haze. And the Fantastic is of noble quality, its disorder is only apparent, it really obeys an order that is fashioned mysteriously and on a level which normal consciousness does not reach but which Ciguri [peyote] allows us to reach, and which is the very mystery of all poetry.*
>
> *—Antonin Artaud, The Peyote Rite Among the Tarahumara*

The Plant

The Tarahumara say that peyote sings to them. That, when they are hunting the cactus in the peyote grounds, it sings beautiful songs for them to help them find it. The Tarahumara peyote hunt is less strictly ritualized than that of the Huichol. Trading and other commercial enterprises are often combined with the pilgrimage. Food and sexual prohibitions are looser, the diet restricted to ground maize only when actually collecting the peyote. The Tarahumara used a "rasping stick" in their ceremonies, and Artaud describes the rituals necessary for their construction. Such rituals and proscriptions were probably more elaborate in the past, before European contact. The same is likely true of the Cora, in western Mexico. But in other ways, modern Mexican peyotism is still very much as it was described by early Spanish observers.

> *They began by forming a circle of as many men and women as would fill the space which had been swept off for this purpose. One after the other went dancing into this circle or kept time with his feet, keeping in the middle the musician and the choirmaster whom they had invited, and singing in the same cacographic tune*

> *that he set them. They danced from five o'clock in the afternoon to seven o'clock in the morning, without stopping or leaving the circle.*
>
> *—Padre José de Ortega (1700-1768)*

The Huichol peyote tradition is a pervasive and dynamic part of their ceremonial life—which is to say, their existence as a people. They are given it as children by their mothers, and it is eaten by adults for both religious and medical reasons, and sometimes just for fun. Fierce resistance—both armed and diplomatic—and strategic retreats to inaccessible areas saved the Huichols from conquest, and enabled them to maintain the old ways to a remarkable degree. Still, it is a living and an evolving tradition, and cannot be extrapolated backwards in time to represent a "typical" peyote ceremonialism of three or five hundred years in the past.

Peyote is part of an encompassing world-view in which human beings are involved in reciprocal obligations to a large number of supernatural deities. Some of these deities are elementals—fire, gentle rain, storm and lightning rain, maize—but almost all of them have specific residences—special places where they hang out. And it is at these locations, often long distances from the Huichol ranchos, that offerings must be left. Each of the deities has its own personality, but it is clear from Blosser (2005) that they are all touchy about missed appointments or obligations. And since the deities are so ubiquitous in every part of Huichol life, a great deal of care must be given to one's general behavior and demeanor.

To the Huichol, unlike the Tarahumara who sometimes buy peyote, only plants gathered on the pilgrimage to the sacred Wiricúta are "good peyote." While all aspects of Huichol life are suffused with interaction with the sacred, the peyote hunt is the most demanding and protracted of their many rituals. No peyote grows where the Huichol live today, in the Sierra Madre Occidentale. Peter Furst, following a theory first proposed by the French scientist Léon Diguet in the 1890s, believes that the Huichol may have migrated to their present home at the time the Spanish invaded the deserts of San Luis Potosí, enslaving Indians to work in the silver mines (Real de Catorce was a silver mining town). The presence of words in the Huichol language for plants and animals (and specific geographical features, such as springs and mountains) found near Wiricúta, but not in the Sierra de Nayarit, give this theory some credence. In the days before cars and buses, the three hundred mile pilgrimage lasted about forty days.

Real de Catorce

We'd picked up a young boy in Cedral, who said that he'd show us the way to Real de Catorce. Antonio talked with him as we drove west across the desert, lisping his sibilants to show off his Castillian. After we'd driven about ten kilometers, the boy told us to turn off. A single lane dirt road led off south through the cactus and scrub. The road was raised and cobbled with large round riverstones, and we had to drive slowly. After another twelve kilometers the road began to wind up into the mountains, passing ruins of churches and other adobe structures—they could be old—the Conquest was nearly five hundred years ago now. Three-quarters of the

> *way up the mountain we came to a tunnel, single lane with a sign saying that it was over two kilometers long. As we hadn't seen another car since we had left Cedral, we drove in, and many minutes later emerged from the darkness onto a sunlit plaza with church, people, houses, and a few trees. We parked and continued walking on up the street. In the space of two blocks the houses became more and more dilapidated, until they were clearly ruins, and then just traces of ruins, and then desert. It was impossible to tell exactly where the occupied houses stopped and the ghost town began. A man at a cantina told us that there had been a big battle in Real de Catorce during the Revolution. The few shops sold items of silverwork, as they have for two hundred years.* Plata y oro, *the allure of the New World.*
>
> *This was Real de Catorce, the sacred Wiricúta. Where the peyote grows.*
>
> *For the Huichol, that a mining town like Catorce lies at the endpoint of their pilgrimage, on the edge of Wiricúta, is a temporary blip of history hardly worthy of notice.*

The Plant

Many acts of ritual purification are demanded of the peyote pilgrims. On the night before embarking on the pilgrimage, the peyoteros bathe, offer prayers, burn five tortillas in the fire, and sleep with their families in the sacred "god house," the temple where the sun and the moon meet. Once the pilgrimage begins, the participants must abstain from sex, bathing, and salt. New pilgrims, those making the journey for the first time, are blindfolded when approaching the many sacred places along the way where prayers are offered.

Before entering Wiricúta, everyone must declare openly to the group the names of everyone they have had sex with since puberty, after which they are cleansed by the shaman. If someone demurs at this point, as sometimes happens, it is considered very bad and the journey may even be aborted. Among the old hands, spouses and friends may offer names to help jog the memory of the one confessing. For each name, the shaman ties a knot in a cord, which is later burned. A story tells that for one old and respected peyotero, the group insisted that only one knot be made for every five names, since otherwise there would be no room on the string for anyone else. No one is supposed to display anger or jealousy at the revelations—the purpose is to become of one mind, one heart—but sometimes there may be recriminations or trouble later, as may have been the case with the gifted Huichol shaman Ramón Medina Silva, who was killed in a bar fight.

While the Huichol deities are supernatural, they have special physical manifestations or emanations, usually connected with springs or water. Peyote is the emanation of Deer. Some say that maize, in the time before Blue Maize Girl, was also a deer. According to other stories, the first ear of maize was peyote, and peyote was the antler of the sacred Deer, present along with Grandfather Fire and Grandmother Growth at the creation of the world. In this world, the first peyote plants grew from five footsteps of the sacred Deer. There are five places of transformation for wolf shamans. There are five kinds of maize, and ritual obligations usually come in groups of five. There are five quadrants but there are also four cardinal directions.

When the first cactus is spotted in the peyote fields, the shaman stalks it and shoots four arrows at it, one for each of the cardinal directions. Prayers and gifts of tobacco are offered for the dying deer. The peyote is cut off a little below soil level, so that it will still regrow. The crowns are each cut into five pieces and everyone is given a piece by the shaman, the *mara'akame*, to touch to their foreheads, eyes, throats, and hearts, and then to eat. Then the gathering commences, sometimes with singing and dancing. At nightfall, when the gathering baskets are filled, peyote is eaten around the fire. Prayers are offered. As recorded by the early Spanish chroniclers, there may be weeping.

And there is singing. And dancing. And old stories are told.

The Plant

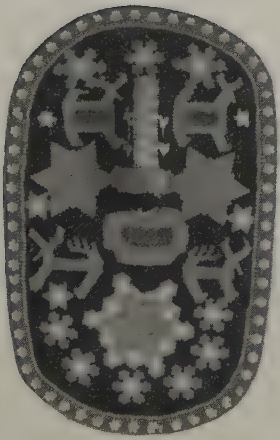
Even Huichols sometimes have "bad" or frightening trips. The Huichols always have explanations for such occurrences—the person has not confessed completely; the person has not completed the ritual obligations; or the person has not been truthful in his dealings with the others, was hiding something from the group and hence was not of "one mind." Such a person often distances himself from the group, and in such a case the *mara'akame* will try to bring the person back in and get them to bring out into the open what it was they were hiding. Other times the person is left alone, and Stacy Schaefer reports of hearing such a woman thrashing and moaning in a nearby room.

This practice of leaving someone alone to thrash out their issues suggests the following idea: the "bad trip room."

The "bad trip room" would be decorated with fearsome deities, painted in hot and macabre colors, with messages on the walls such as "You're bad," "You deserve it," "It's all your fault," "That everyone is after you doesn't prove that you are important," "Captive mind-control cannibalism in practice," "You'll be insane forever. . . I know," and "It's all a plot, and this proves it." Stuff like that. It should cure or kill. So much of a "bad trip" is just the fear of having a bad trip. More, interference by well-wishers that "everything is ok" are usually counter-productive—implying that there is something wrong with the process underway and often interrupting what could be a deep catharsis. We should add "Wail out loud" to the slogan list, or "Crying is ok in here."

Then we might add a "Messiah Room." The Messiah Room should be painted in garish colors, and have at least one of those neon Jesus pictures where his eyes move up and down, his face dripping with blood—lots of plastic. The slogans could include "It's been revealed to you alone," "No one else understands, not even those of us who have written this," "Savior of the World," "You're the One," and "Congratulations, wow, everyone else must be really stupid."

Everyone ought to be required to spend some time in each room, just as prophylaxis.


HUICHOL MASK

Peyote, like maize, can read one's thoughts. Just as it is important not to go into the cornfields with bad thoughts, one must be fully purified before meeting peyote. That one's inner state is a dynamic force affecting the whole universe is an axiom of our Way, as it is in alchemy, Buddhism, and the magical traditions. Freud, in a rather philistine way, summarily dismissed this premise as "omnipotent thought"—and all very infantile.

> *And, after all, if you think about it, what difference could reciting a prayer and placing a tobacco offering at a spring make to the world? I mean, except in terms of harmony?*

Lévy-Bruhl more appropriately called it the "logic of participation." It is nowhere more apparent than in sessions with the sacred medicines.

> *For the Tarahumara are obsessed with philosophy; and they are obsessed to the point of a kind of physiological magic; with them there is no such thing as a wasted gesture, a gesture that does not have an immediate philosophical meaning.*
>
> *—Antonin Artaud*

Before leaving the Wiricúta, the peyoteros paint designs on their faces with a yellow paint made from the roots of *Berberis trifoliata* [=*Mahonia t.*] The last part of the pilgrimage is a deer hunt, which may last several days. During the hunt, the hunters eat only peyote. Only after the hunt, when the deer meat, like the peyote, is strung on cords to dry, may the pilgrims bathe.

The Plant

The *Hikuli* Feast, the Feast of the Peyote, is performed in January and lasts for three days, culminating in the ritual parching of maize, which is then eaten by all. Until the morning of the third day, peyote is eaten more or less continuously, along with *tesvino*, a fermented maize beer.

But eating peyote is not restricted to ceremonial events. The Huichol, like the Tarahumara, use peyote for many non-ritual purposes—where "non-ritual" here means private, or personal, as opposed to formal group ceremonies. Sometimes peyote is eaten for its medicinal value. Stacy Schaeffer reports that Huichol infants are given peyote by their mothers, and are in fact often introduced to the plant while in their mother's womb, and later through her milk. Schaeffer also tells of a woman who had long been infertile getting pregnant after a peyote pilgrimage. But it is in no way considered sacrilegious to privately ingest the plant for its visionary qualities, and such may be done at any time of the year.

> *For we are all,*
> *We are all,*
> *We are all the children of,*
> *We are all the sons of,*
> *A brilliantly colored flower,*
> *A flaming flower.*
> *And there is no one,*
> *There is no one,*
> *Who regrets what we are.*
>
> *—Huichol Song*

CORRESPONDENCES, I

ACTIVITY	Hunting, Magical Warfare
ANIMAL	Deer, Waterbird, Mermaid
METAL	Quicksilver
METAPHOR	Wilderness
MINERAL	Serpentine
MUSICAL INSTRUMENT	Drum
ART FORM	Music, Pyrotechny
BODILY FUNCTION	Assimilation
CRUTCH FOR	Sick Soul
DIMENSION	Space
BODY PART	Stomach
ARCHETYPE	Magus
DISCIPLINE	Cosmology
ELEMENT	Water, the Ether
FORM OF ENERGY	Electricity
COSMIC ENTITY	Galaxy
FORM OF IGNORANCE	Paranoia
GOD	Queztalcoatl, The Creator
GEMSTONE	Blue Diamond
GRAMMAR	Natural Languages, Wild Systems
HISTORICAL AGE	Alcheringa

PEYOTE BAG

History, United States

According to Omer Stewart, the syllables of the Opening Song are from Lipan Apache, passed on from singer to singer through well over a hundred years of meetings:

> *na he ne ne ya no witsa nai ya*

The earliest descriptions of peyote use in its homeland in northeastern Mexico are quite similar to descriptions of peyote use among the western tribes such as the Huichol, the Cora, and the Tarahumara. In 1649 Alonso de León witnessed a group ceremony among a Coahuiltecan people, probably Carrizo. The ceremony involved eating peyote, dancing around a fire, passing-out, and blood-letting (from those fallen unconscious). A similar ceremony is described by Vicente Santa María in 1760 for the Tamaulipeca: quantities of fruits and food were placed around a bonfire for a feast, followed by all night dancing to a drum, impromptu versification, prophesying, and prayers to the sun and moon and earth.

Sometime in the eighteenth or early nineteenth century, it seems that the Carrizo developed a new ceremony with peyote, with the participants sitting instead of dancing, without bloodletting, and generally with more contemplation and less overt exuberance than had been recorded earlier—the "quiet ceremony." As Stewart points out, many elements of the ceremony were common to the old Mexican peyote complex: the gourd rattle, the drum, the ritual number four, the all night ceremony, incense and cleansing fire, and offering prayers with corn-husk cigarettes. The Carrizo (called the "Barefoot Indians") were Christianized and lived around missions, and some conjecture that the new ceremony was a hybrid, a new synthesis of Christian and Indian forms. By the mid-nineteenth century, the Carrizo had shared the ceremony with their neighbors, the Lipan Apache. The Lipan Apache passed on the ceremony to the Mescalero Apaches in Texas and New Mexico, to the Comanche, Tonkawa, and Karankawa in Texas, and ultimately, to the Kiowa-Apache and other tribes in Oklahoma. While the

STEATITE COUGAR PIPE, DA´OUD THOMPSON

ceremony clearly contains, in locally varying amounts, some elements found in Mexican peyotism, in the Red Bean Cult, and in Christianity, the Peyote Way remains a distinct indigenous North American creation.

The Medicine

> *We'd been driving for some miles through a typical Great Basin valley when we suddenly turned off into a new housing development—streets and cul-de sacs of cookie-cutter houses—a bedroom community whose urban association was, to say the least, unclear. After several turns on the identical-looking streets, we drove up over the curb between two houses and out onto the identical-looking sagebrush. In less than a hundred yards we began passing dead cars on blocks, dead trucks, dead trailers scattered around in the desert, seemingly at random. We were in Indian Country. Over a bluff there were two tipis.*

The link between peyotism and the Red Bean Cult (centered around *Sophora secundiflora*) is a matter of scholarly debate. Some believe that when peyote became available as it diffused northward, it replaced the much more dangerous mescal bean as a visionary intoxicant. Merrill (1977) denies any direct influence of the mescal bean cult on the modern peyote ceremony in the United States, and even doubts that mescal beans were used for much more than ornamentation. Merrill's thesis seems unlikely, given the ancient association of the two plants. According to J. H. Howard (1957), the Comanches, Otos, and the Tonkawas mixed mescal beans and peyote together into a drink. But it may all depend on what is meant by "direct influence." The eighteenth and nineteenth centuries were times of large cultural disruption, change, and migration in the North American west. While the Red Bean Societies, in tribes such as the Kiowa, may have been recent innovations, the use of the bean itself is well attested as far back into antiquity as we can see. Cabeza de Vaca mentions mescal beans as items of trade in 1539. The Stephen Long Expedition of 1820 reported that mescal beans were used both medicinally and shamanically among the Iowa and the Arapaho. What is clear is that the red mescal beans still have a presence in the modern peyote religion, often being worn as necklaces by the roadman and other participants.

Whatever various traditions were melded into the Peyote Way, its true roots are in the visions and teachings of the peyote itself.

> *A woman had fallen behind the rest of her band, exhausted. She lay down beneath a mescal bean shrub, and in the little shade that it offered gave birth to a child. Some say that the child was a boy, others say it was a girl.*
>
> *The woman had no strength left, no food. She thought she would surely die. Then a voice spoke to her: "Eat the plant that is growing beside you, it is life and a blessing for you and all your people."*
>
> *The only plant beside her was a small thornless cactus. As she reached for it the plant grew towards her. She pulled up the plant and ate it. Strength returned to her immediately. She sat up and looked around. It was dawn. She gathered as many of the plants as she could carry and set out walking. Soon she found her*

> *band. She took the plants to her mother's brother. Her uncle said: "This is truly a blessing. We must share it with all the people."*

One of the first North American tribes to get peyote from the Lipan Apache were the Comanche, who quickly shared it with their friends, the Kiowa. The Comanche probably also got most of their the ritual from the Lipan Apache, though the crescent-shaped altar may have come from the Kiowa, who used a crescent altar in their Ceremony of the Sacred Stones (which took place inside a tipi, with the sacred stones set on top of the crescent, just where Chief Peyote is placed in the peyote ceremony). Whatever the precise route of introduction, the true center of diffusion was Oklahoma, Indian Territory, and one of its first apostles was Quanah Parker.

Quanah Parker was a rising young warrior in one of the last bands of Comanche to turn themselves in at Fort Sill, Oklahoma, in 1875. He undoubtedly had taken part in many of the fights and raids of the Red River War, and he had been an organizer and leader of the unsuccessful attack on the buffalo hunters at Adobe Walls, a fight in which he was wounded. The failure of the assault on Adobe Walls, where the Indians had a large numerical advantage, and the nearly complete extermination of the southern buffalo herds on which the free life of the Comanche depended, convinced Quanah of the futility of advancing their cause through further armed resistance.

Once at Fort Sill, Quanah sought to make contact with his mother's family. Quanah's mother, Cynthia Parker, was a white woman who had been taken captive as a small child. Reared as a Comanche, she declined to return to her white family when they located her many years later. Only when her Comanche husband, a chief named Nokoni, was killed did she consent to return to a way of life she had all but forgotten. She took with her a baby daughter, Prairie Flower, but left her son Quanah with her husband's people that he might become a leader among them as his father had been. But the new way of life did not agree with Cynthia Parker, and both mother and daughter soon died of illness.

Quanah feared that the same fate might await him, but he joined his mother's family in order to learn the ways of cattle ranching, and was welcomed as their sole surviving son. Quanah's fears were soon realized. He became critically ill with blood poisoning after being gored by a bull. The white doctors tried what they could, but it seemed that Quanah was dying. In desperation, his family summoned a *curandera*, an Indian healing woman who was probably Lipan Apache or Tarahumara. She made a hut for Quanah outdoors and doctored him with peyote. Quanah recovered, and, according to the story, returned to his people with peyote and the rituals of its use.

The Medicine

> *Anyone who has ever participated in a Zen sesshin would feel very much at home—the careful sweeping of the sacred space, the discussions among the leaders on the minutiae of the ceremony—which side of the flap do people exit after the water ceremony, does the main prayer follow or precede the cedarman's prayer, etc.*

Bundles of willow twigs marked the inner perimeter, and sprigs of sage that had been tied together lay in a radial pattern around the edge of the tipi. The wood, mostly maple, was carefully stacked outside the entrance. The sun was setting and we awaited the roadman.

History

Quanah became a successful and influential member of his tribe, and a leading teacher and exponent of the Half-moon ceremony. He was also a shrewd negotiator and an articulate defender of the Peyote Way, making a number of trips to Washington D.C. to counter proposed acts of governmental suppression.

Another early defender of the new faith was a young anthropologist named James Mooney who had come west in 1891, employed by the Smithsonian Institution to study Kiowa year counts. Mooney witnessed a Kiowa peyote ceremony, and published the first anthropological report on peyote. Mooney was impressed by what he saw, and soon became a "participant observer." As attempts to suppress the Peyote Way grew more intense over the next two decades, Mooney saw the need for peyote users to be protected by becoming an officially recognized religion. Mooney called for a general meeting of all Road Men at the Cheyenne Agency at Darlington, Oklahoma. Representatives were present from the Southern Cheyenne, Oto, Ponca, Comanche, Kiowa, and Kiowa-Apache tribes. As only Oto and Ponca are even in the same language family, holding the meeting at all was an accomplishment, especially since a number of the tribes present were long-time, almost hereditary enemies. Mooney wrote up the papers. In 1918 the Native American Church applied for a charter from the state of Oklahoma and received it. Mooney was one of the signers.

QUANAH PARKER

The Ally

Rolling a prayer smoke, think about or speak what you wish to pray. Smoking is the prayer. Send smoke to heaven, then to earth,

[HE BLOWS INTO HIS HAND, OFFERS UP SMOKE TO HEAVEN, BLOWS AGAIN AND REACHES TO THE FLOOR, PRESSING SMOKE INTO THE EARTH. *But the form is not important: you know what you mean,* HE SAYS]

then for yourself,

[HE BLOWS AND SPREADS SMOKE WITH HIS HAND OVER HIS BODY]

and your children.

[HE DESCRIBES AN OLD MAN, SO OLD THAT HE SEEMS COMPLETELY OUT OF IT, DOING A SMOKE PRAYER]

> *Several ways present themselves at first. You choose one. It's easy at first, but it gets real hard at a certain point. If you fall off, it takes a long, long time to get back to the same point. It takes much prayer.*
>
> *—Billy Brown, a Navajo silversmith on the Peyote Road,*
> *quoted in Blosser, 1973*

James Mooney also wrote what is still the definitive account of the Ghost Dance, "The Ghost Dance Religion and the Sioux Outbreak of 1890," published in 1896 as Bureau of American Ethnology Annual Report 14. The Ghost Dance also came to Oklahoma. Like the peyote cult, the Ghost Dance was a syncretistic pan-Indian movement, and incorporated Christian elements. Quanah Parker opposed the Ghost Dance, advising Indians to follow the Peyote Way instead. But interest in the Ghost Dance was high, and a single dance might be attended by three thousand Indians. The Sun Dance had been forbidden, and the Ghost Dance offered new hope. Fears of a general uprising were also very high, among the whites. The press, and many Indian agents were calling for the army to use troops to disarm the Indians and stop the dancing. A remarkable army officer, Lt. Hugh L. Scott, was placed in charge of handling the Ghost Dance. The lieutenant resisted a great deal of pressure, from within the army and from without, to use troops to disarm the Indians. He wrote letters, he found allies, and he refused to interfere. Scott's calm and level-headed prudence probably averted a great tragedy, such as occurred at Wounded Knee.

The Ghost Dance ran its course for several years, and faded away. Along the way, the movement of many Indians between the different reservations in Indian Territory helped to spread the new peyote religion. Some who were leaders in

THE GHOST DANCE

the Ghost Dance, like Caddo John Wilson, Pawnee Frank White, and the Arapaho Sitting Bull, became peyote leaders.

Opposition to the new religion came both from within the reservations and without. Many Indians opposed the Peyote Way because it was a foreign religion from Mexico, or because they saw it as eroding their own traditional tribal customs, or because they were Christianized and under the influence of missionaries. The missionaries were by far the most zealous opponents of peyotism. One man in particular, William E. "Pussyfoot" Johnson, made the eradication of peyote his personal life crusade. His able adversary, Quanah Parker, and other peyote Indians, were able to defeat Johnson's efforts to include a ban on peyote in the new Oklahoma State Constitution in 1907. Undeterred, Johnson, a prohibitionist, continued his assaults on peyote meetings and the commercial peyote trade.

The missionaries, and the Indian agents who were usually deeply under their influence, used laws forbidding the sale of intoxicants to Indians to make arrests or to break up peyote meetings. This was mostly harassment, as the Indians insisted that peyote was not an intoxicant, and the courts usually agreed. Other convictions failed because of the confusion between peyote and mescal beans. Whites insisted on calling peyote "mescal bean" in statutes aimed against the cactus. Expert witnesses, such as Parker, would testify against Johnson that peyote was *not* mescal bean. Quanah Parker died in 1911, mourned by seven wives.

The Ally

> *You have to think about your own life and how you want to be. Then you will feel that feeling coming inside of you. It is like you will cry. A grown man can't cry unless he is hurt bad. Well, it's like that. . . like you are hurt bad. Like you feel sorry for yourself, how no good you are, and how you haven't done anything good for yourself or anyone. The feeling just starts coming out of your body. You can't help it. The words come with it. The words come right out of the body. Then you start talking good like you never did talk before. You feel strong and good like a real man. Then you feel strong enough to help other people along a bit. That's what real Indian praying is.*
>
> *—Washo peyote man, in Warren d'Azevedo, Straight with the Medicine*

The history of the spread of the Peyote Way is a history of individuals, and between Weston La Barre and Omer C. Stewart, it is well recorded. Maybe someone had to take refuge with another tribe for awhile because of something he had done, or a man went to live with another tribe because he married a woman there. Red Fox, a Comanche who was exiled from his tribe for "immoral behavior," took refuge among the Navajo and introduced them to peyote in 1901. A Sac and Fox man who had eloped with another man's wife was forced to hide out in western Oklahoma for some years. When he returned to his reservation he introduced the Sac and Fox, the Kickapoo, the Shawnee, and the Iowa to the Peyote Way.

Variants of the ceremony emerged, such as the Big Moon ceremony, originated by John Wilson, in which the altar is horseshoe-shaped, and larger than in the

Half Moon ceremony of the Comanche and the Kiowa. John Wilson, a Caddo, spent several weeks in seclusion in 1880, eating peyote and receiving instructions about the details of the ceremony directly from the plant. Wilson spread his Big Moon ceremony to the Caddo, the Delaware, and the Osage. Wilson's Big Moon Way incorporated more Christian elements than the "old way" taught by Quanah Parker, which referred more often to Indian mythology and legends. But similarities outweighed the differences: both ways taught that peyote was the teacher, inveighed against the use of alcohol, and stressed moral and familial responsibility. The heart of both ceremonies was the singing of peyote songs.

> *I pay attention to the way each man sings. I know all about a person the way he sings. When I sing, each song is like part of my own self. It can't be no better than me. So when I sing, it ain't like on the radio or to pass the time. I'm trying to get myself up as good as I can. I don't just sing a song. . . I'm taking a trip. When I'm singing I'm praying in the Tipi and going on that trip over that Road.*
>
> *—Washo narrative, in d'Azevedo*

History

John Rave brought the Big Moon ceremony to the Winnebago, where it became known as the Cross Fire Way, and spread to the Chippewa, the Menominee, the Sioux, the Shoshone, the Ute, and other tribes of the northern Plains. The Cross Fire Way is notable by the prohibition of tobacco, and may be the most "churchly" of the peyote ways, sometimes having permanent buildings with cement altars, and even incorporating baptism.

The Ally

> *For three days and three nights I had been eating medicine and for three days and three nights I had not slept. Throughout all the years that I had lived on earth, I now realized that I had never known anything holy. Now, for the first time, I knew it.*
>
> *—John Rave, in Paul Radin, The Winnebago Tribe, 1923*

Sometimes the Peyote Way didn't mix well with a particular tribe's traditional religion. Alice Marriott, who describes the Comanche as the "most pragmatic and the most skeptical" of the Plains tribes, thinks that they were an ideal tribe to receive the new religion. They had no Sun Dance or other big religious ceremony. Young men were expected to go on a vision quest, and to fast and pray for a guardian spirit, but after that, spiritually, every man was on his own. Each man was his own priest.

By contrast, sometimes the egalitarian access to the Spirit that comes with the Peyote Way conflicted with the shamanism, with its attendant rivalries. According to Boyer (1973), peyotism on the Mescalero reservation led to disruption and even violence as the new way challenged traditional shamanic prerogatives.

Among the Washo, a number of the old "sucking doctors" crossed over, and conducted healings both ways.

> *We don't talk about power like them old doctors do. We just say the Medicine. The Medicine is greater than any of them other things because It was here before any of them. We don't want doctor power. We got the Tipi Way to show us how to help each other and live like real Indians on this fine earth.*
>
> *—Washo narrative, in d'Azevedo*

* * *

The Navajo adopted the "V-Way" ceremony. For some time, Navajo peyotism was opposed by many within the tribe, including the Tribal Council, who saw it as a foreign religion that would erode their traditional chant ceremonies, such as the Blessing Way and the Evil Way. David Aberle, in *The Peyote Religion* among the Navaho (1966), includes several interviews with Navajo road men who were also traditional singers.

The Ally

> *This is a nice history, but that's not what the Medicine is really all about. You haven't said anything about the healings—prayer healings and visionary healings—like when Johnny Simpson, while he was singing, saw the bird which was what Lena's little daughter had lost, and how Lena, on the other side of the tipi, knew at that same instant that her daughter was healed, and how after the meeting they all drove to the hospital and Lena's daughter had suddenly recovered and was discharged.*
>
> *You haven't told them about the fragrance of the cedar, when the cedarman sprinkles it over the coals. You haven't told about the fireman, about how busy he is tending the fire, constantly adjusting the wood and shaping the bed of the coals into an ever-expanding half circle.*
>
> *You haven't told about how the staff (the "cane") and the feather are passed around the circle, how four songs are each sung four times, and how, in the quiet spaces, you can sometimes hear the songs from the other tipi, the fall of the water-drum at the end of a song, and its rising as a new song begins.*

Big miracles are rare, but small miracles are common. It's the accumulation of small miracles that make the Peyote Way more a matter of pragmatism than of faith.

The Peyote Way is a pan-tribal religion. It has been a unifying force among Indians, even if sometimes devisive within a particular tribe or family. The Road Man, the Cedarman, the Drummer, the Fireman, and the Water Bearer each have specified duties to perform, but the Spirit is open to all. Anyone may "catch" a song, or a prayer. Peyote meetings are traditionally called for a specific purpose, for helping or curing someone who is sick or needs help. Some roadmen include shamanic curing as part of the ceremony, but curings are more often based on prayer and the songs. The Spirit is open to all, to all who can open and accept it.

The Ally

> *Sometimes It is too much for a person who is just starting. He quits because he can't face It. Sometimes a man who has been in a long time will quit because he's done something, and he knows how hard It will be on him to get back. He either faces It or he don't. That's up to the person. But if he don't face It, he will go down. He will slowly sink down with nothing but dust in him. He will be half alive until he dies and he won't be human any more.*
>
> *—Washo narrative, in d'Azevedo*

The Medicine

The Peyote Way is a family affair: brothers and sisters, relatives and friends and neighbors—and always an open space for the visiting stranger, who is welcomed with generosity.

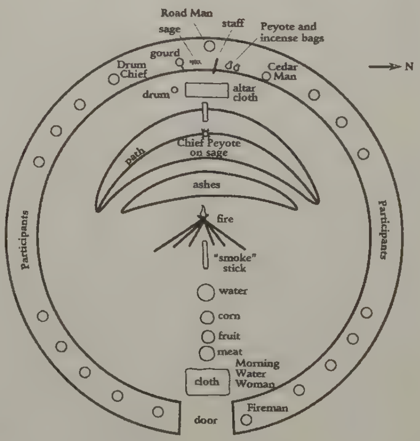
> *It makes me feel good to see you here.*

Generosity is one of the most moving characteristics of the Peyote Way ceremony—sharing of community, of blessings, of food, and the Medicine.

> *That's because we are thankful for what the Creator has given to us—water to drink, water to flow in rivers, water that falls from the sky. We are grateful for the food we have to eat, for all that the earth brings forth, and for that good feeling we get when we see the sky lightening at dawn.*

The Plant

The members of the various branches of the Native American Church in the United States and Canada consume between five and ten million peyote tops every year. As the licensed commercial peyote harvesters are not replanting or attempting any cultivation, the size of the buttons has been steadily decreasing. while the price has been going up. Not surprisingly, the amount of peyote consumed at meetings has also been decreasing. One researcher estimated that a common dose of a tablespoon or two of peyote powder would provide about a hundred milligrams of mescaline. I told one member of a circle, "I think the medicine is just an excuse for you people to get together here and sing." "Oh no," he assured me, "sometimes the medicine is very, very strong."



PEYOTE CIRCLE

The Medicine

> *It is very nice of you people to make me feel welcome here. And to invite me back to this place. It's just a question of where to go to work, that's it. There are lots of people that need help in this world. . . As you know, my brother.*

CORRESPONDENCES, II

HUMOUR	Sanguinary
IMAGE	The Web
LANDSCAPE	Desert, Jungle
LOGICAL OPERATOR	Nor
MYTH	World Puma
GODDESS	Gaia
NUMBER	Aleph One
OCCUPATION	Doctor, Singer
OUT-OF-BODY REALM	Realm of Infinite Knowledge
PERIODIC TABLE COLUMN	Nitrogen column
MYTHIC HERO	Prometheus
BUDDHA REALM	Buddha
GEOMETRY	Hilbert Space
COLOR	Ultraviolet
PHASE OF COITUS	Orgasm
PHYSICAL CONSTANT	Fine Structure Constant
POISON	Delusion, Idolatry
PLANET	Mercury
PROPORTION	Geometric Mean
QUANTUM FORCE	Strange

Mescaline, Effects

> *I can, indeed, say that ever since this experience I have been more aesthetically sensitive than I was before to the more delicate phenomena of light and shade and color.*
>
> *—Havelock Ellis*

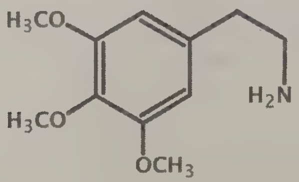
Mescaline itself is the prototypical hallucinogenic phenethylamine. The first chemical study of peyote was published in 1888 by Louis Lewin, who detected a mixture of alkaloids in the cactus that he named anhalonin. Lewin, however, had not demonstrated that anhalonin was the chemical responsible for the visionary effects of the plant. This work was performed in 1897 by Arthur Heffter. Heffter isolated four alkaloids from peyote, one of which he named *mezcalin*. Unable to distinguish which, if any, of the alkaloids produced the visionary effects by giving the alkaloids to animals, Heffter proceeded with self-experiments. On November 23, 1897, Heffter ascertained conclusively that the effects of *mezcalin* differed "in only a few respects" from those of the whole cactus, by ingesting 0.15 grams of mescaline hydrochloride.

An inspiration to us all.

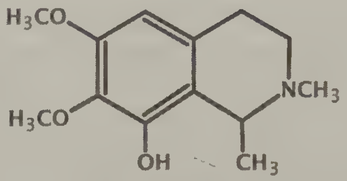
We now call Heffter's indispensable technique the "bioassay."

Chemistry and Pharmacology

Edward Anderson lists fifty-seven different alkaloids that are found in peyote. The major alkaloid, and the one responsible for most of the plant's noophoric effects is 3,4,5-trimethoxy-phenethylamine, mescaline.



mescaline



pellotine

The total alkaloid content is typically three to four percent of the dried buttons, 0.4 percent of fresh heads. Figures for the actual percentage of mescaline vary widely, but seem to center at around 30% of the total alkaloids. This translates to between one and two percent mescaline in dried buttons. (Heffter reported 6.3 percent, but all other workers have found lower values).

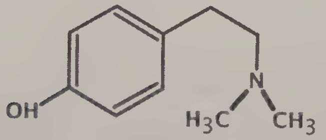
Lundström, who reported the 30% figure as mescaline's share of the total alkaloids, also reported pellotine, 17% of the alkaloids; anhalonidine, 14% of the alkaloids; hordenine, 8%; lophophorine, 5%; 3-hydroxy-4,5-dimethoxy-PEA, 1-5% of total alkaloids.

To put one persistent myth to rest, there is no strychnine in peyote. The white fuzz that is usually removed from the buttons before ingestion can be a gastro-irritant, but it does not contain strychnine. However, lophophorine, accounting for about 0.18% of the dry weight of the buttons, can cause some symptoms similar to strychnine poisoning, such as a sickening feeling in the back of the head, and hotness and blushing of the face. Lophophorine causes violent convulsions when injected into rabbits at concentrations of 12 milligrams per kilogram of body weight.

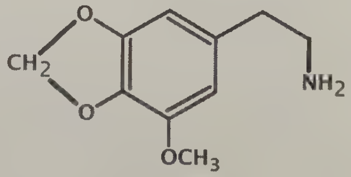
Pellotine, the most prevalent alkaloid in peyote after mescaline, also can cause convulsions—at least in frogs. In humans, pellotine is a hypnotic: slowing the heartbeat, decreasing blood pressure, and eliciting drowsiness and a disinclination for physical or mental effort. The effects of anhalonidine are similar. In frogs, large doses lead to complete paralysis.

Anahlonidine, pellotine, lophophorine, anhalonine, anhalinine, anhalamine, and a dozen related tetrahydro-isoquinolines have two rings. A methyl group on the nitrogen bends around and connects with the phenyl ring. Some of them have a

4,5-methylenedioxy ringlet. The profound Dr. A. Shulgin, in *PIHKAL*, has predicted and named (and synthesized), an undiscovered biosynthetic precursor for these molecules: lophophine, 3-methoxy-4,5-methylenedioxyphenethylamine. He believes that it should be active, though his own tests failed to reveal any activity in doses up to 250 milligrams. Nor has the compound been found yet in peyote. Dr. Shulgin believes that both negative data will change in the future.



hordenine



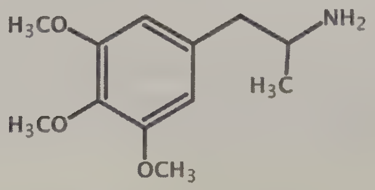
lophophine

Hordenine (4-hydroxy-N,N-dimethyl), present in peyote and in many other genera of the cactaceae, is also widely distributed in the grasses. Hordenine has an effect on the heart muscle similar to ephedrine, and causes hypertension and accelerated pulse. Large doses are lethal, paralyzing the respiration. Hordenine is a powerful topical antiseptic, and is probably responsible for at least some of the demonstrated antimicrobial virtues of peyote juice.

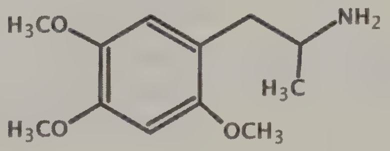
But it is in our own time that the nooks and crannies of the phenethylamine story, with all their wonderful and astonishing variations, have been methodically explored. I refer the reader to *PIHKAL: A Chemical Love Story*, by Ann and Alexander Shulgin, to learn everything you didn't even know you didn't know about "Phenethylamines I Have Known And Loved," a book no serious student of the art should be without.

In structure-activity charts of the many substitutions that could be made on the mescaline molecule, mescaline is always used as the standard: activity = 1. If an extra carbon atom is attached to the nearest carbon atom of the side chain (the a carbon), we have a sort of mescaline-amphetamine (3,4,5-trimethoxyamphetamine, or TMA), with activity index of 2. Dr. Shulgin synthesized and self-tested all of the possible arrangements of the CH3O groups. Nearly all of the other arrangements increased the potency. The most potent was TMA-2 (2,4,5-trimethoxyamphetamine), to which Shulgin gave an activity index of 20. (K. Trout (2005) points out that qualitative differences in the chemicals make the comparison somewhat dubious, and states that 20 mg. of TMA-2 is more like 200 mg. of mescaline, which would give an activity index of 10. Besides, TMA-2 is more of a stimulant than a hallucinogen.) In any case, relatively large amounts of mescaline alkaloid are required for "phanerothymic" activity.

A lot of poison. To get the medicine.



TMA



TMA-2

And if you are eating peyote, since mescaline is less than one-third of the total alkaloids, you would have to ingest over a gram and a half of alkaloid to get 500 milligrams of mescaline. It's not surprising that a little nausea and vomiting may accompany eating peyote. Still, just to turn theory on its head, at least one very experienced user reports that he finds pure mescaline to be at least as, or even more likely, to cause nausea as does whole peyote cactus. As with many powerful plant medicines, it is often best to eat the medicine in several portions, rather than all at once.

The philosopher Gottfried Benn wrote:

> *Potent brains are not strengthened through milk but through alkaloids.*

However, our purpose is not to "strengthen a potent brain," but to walk in beauty.

Poesis

Some users, objecting to the bitter taste of the dried buttons, grind them and swallow them in gelatin capsules. Each button, depending on size, may require up to five (even ten, in the old days) "OOO" capsules. Flattery (1963) notes that unchewed material taken in capsules frequently leads to vomiting, more so than does peyote that is chewed and swallowed. My own observations support this, especially regarding extracted material.

> *Which is more likely to make you sick—capsules of black goo that are going to dissolve into pieces of chewing gum in your stomach, or some nice, invigorating bitter tea?*

It is also possible to extract the alkaloids, so-called "organic mescaline." The first question that must be answered is whether you want all of the alkaloids, just the mescaline, or some mixture in between. Most experienced users agree that the effects of purified mescaline are different from those of the whole plant—pellotine and anhalonidine adding hypnotic effects in the whole cactus.

> *Other experienced users will say "huh?"*

As it seems preferable, if one is privileged to have access to peyote, to simply eat the buttons rather than to extract the alkaloids, the details of this messy process are in the Notes. Mescaline may also be synthesized. The chemically inclined reader is referred to *PIHKAL* (Shulgin and Shulgin).

History, *Mescaline*

Euro-American experimentation with mescaline began shortly after its isolation. In "Mescal, A New Artificial Paradise," published in the Annual Report of the Smithsonian Institution in 1898, Havelock Ellis describes his mescaline visions as seeing:

> *thick glorious fields of jewels, solitary or clustered, sometimes brilliant and sparkling, sometimes with a dull rich glow. Then they would spring up into flower-like shapes beneath my gaze, and then seem to turn into gorgeous butterfly forms or endless folds of glistening, iridescent, fibrous wings of wonderful insects.*

Karl Beringer experimented with mescaline in the 1920s, and wrote long, detailed descriptions of his visions. Lewin, in *Phantastica,* quotes him at length, as does Klüver (1928), who attempted to systematize "hallucinatory constants" of the visual effects triggered by mescaline. In spite of the reports of some experimental subjects of "cosmic consciousness," the doctors were studying mescaline's effects as "mescal psychosis." It remained for Aldous Huxley, with the publication of *The Doors of Perception* in 1954, to offer a new paradigm and to bring the potentialities of mescaline to a larger public.

> *For until this morning I had known contemplation only in its humbler, its more ordinary forms—as discursive thinking; as a rapt absorption in poetry or painting or music; as a patient waiting upon those inspirations, without which even the prosiest writer cannot hope to accomplish anything; as occasional glimpses, in Nature, of Wordsworth's 'something far more deeply interfused'; as systematic silence leading, sometimes, to hints of an 'obscure knowledge.' But now I knew contemplation at its height.*
>
> *—Aldous Huxley, The Doors of Perception*

Huxley glimpsed in mescaline the possibility of experiencing the world *without concepts*, a deeply revelatory experience for a conceptual thinker. He stopped short of saying that mescaline brought enlightenment, or the beatific vision, but called it a "gratuitous grace"

> *not necessary to salvation but potentially helpful and to be accepted thankfully, if made available. To be shaken out of the ruts of ordinary perception, to be shown for a few hours the outer and the inner world, not as they appear to an animal obsessed with survival or to a human being obsessed with words and notions, but as they are apprehended, directly and unconditionally, by Mind at Large—this is an experience of inestimable value to everyone and especially to the intellectual.*

Jean-Paul Sartre received an injection of mescaline in a hospital in Le Havre, France, in 1935. At the time, Sartre was unpublished and unknown, working as a college philosophy professor. He was writing a book on the imagination and wanted to experience hallucinations. He got more than he had bargained for. Monstrous crustaceans and giant cephalopods tried to devour him (and unfortunately, no one was there who understood that it was ok, even auspicious, to be swallowed by a giant octopus). Sartre's panic lasted well beyond the session itself—

the visions haunted him for months. Sartre's feelings of disgust, the trapped feeling and the slime feeling, permeate his novel *Nausea*, which brought him fame and shaped his philosophical life forever. Riedlinger analyzes Sartre's experience according to the "birth trauma" system of Stanislav Grof, but of course there are other ways to look at it.

John Blofeld, the Buddhist scholar and vajrayana practitioner, ingested half a gram of mescaline, in two doses, in Bangkok. For some time he struggled with the increasing fragmentation:

> *No words can describe the appalling mental torment that continued for well over an hour. All my organs and sensory experiences seemed to be separate units. There was nothing left of me at all, except a sort of disembodied sufferer, conscious of being mad and racked by unprecedented tension. There seemed no hope of being able to escape this torture—certainly for many hours, perhaps forever. Hell itself could hardly be more terrifying.*
>
> *—Blofeld, 1966*

Blofeld was able to fall back upon his yogic training and find liberation through renunciation, through giving over complete trust to his *Idam*, his personal *dakini*.

> *For the first time in my life I ceased to cling—to cling to self, loved ones, sanity, madness, life or death. . . Within a flash, my state was utterly transformed. From hellish torment, I was plunged into ecstasy—an ecstasy infinitely exceeding anything describable or anything I had imagined from what the world's accomplished mystics have struggled to describe.*

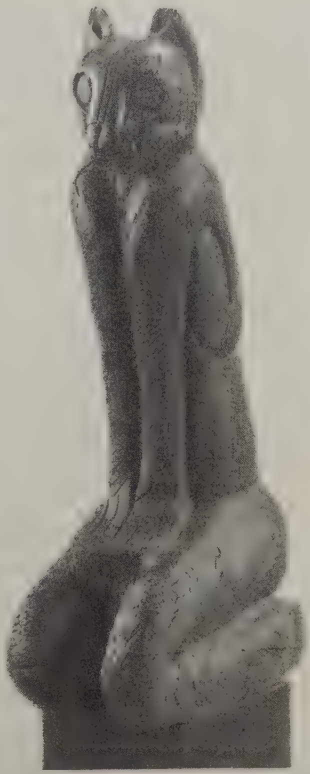
Perhaps the most challenging, certainly the most intrepid, attempt to investigate mescaline from a purely Western perspective was made by Henri Michaux. A summation of Michaux's methodology is found in a footnote in *The Major Ordeals of the Mind*:

> *Those who take drugs in order to surrender themselves to collective release and emotional abandon need not read further. There is nothing here that is meant for them. We do not speak the same language. We do not look for the same effects. He who is incapable of keeping his actions under control, incapable of confining everything to the 'mind,' has missed the point completely. The observer of psychic occurrences has to be 'entrenched.'*
>
> *—Henri Michaux, 1966*

Michaux struggled and fought every inch of the way against mescaline's efforts to draw him out of his entrenchment. Again and again he describes his experience as "intolerable," and "unbearable." He is annoyed when visions are thrust upon him that seem vacuous or inept. He is annoyed at his powerlessness to control them. He describes their progression as mechanical, and not following rules of artistic or literary logic. He seems obsessed with analyzing everything that he cannot do as well under the influence of mescaline as when he is in "normal" consciousness. For one, he can't stop the show—the dynamics of the mind. Michaux tries to find the inner laws of how one thought leads to the next, and uses his time in "altered states" totally to that end, a task for which his poetic training, the ability to maintain aesthetic judgment even in the midst of a maelstrom of images, serves him well. Still, one keeps wishing for the rationalist to let go, to fly through the medicine space to a more magical kind of art.

He writes of the ridiculousness of the inner show. How one is seized with the desire to jump out of a window, to call for help, just to escape it.

> *You begin to write strings of superlatives which mean nothing. There is a call of the infinite, enormous, all-invading. Why? How? As the wall closes in and recedes rhythmically, and your arm seems to lengthen periodically, there are also gales of laughter, which mean nothing either.*
>
> *Don't forget that you have swallowed poison. Psychological explanations are all too tempting. Tracing everything to psychology is poor psychology.*
>
> —*Henri Michaux, 1961*



PUMA, CA. 1000–1600 BCE, FLORIDA

Sometimes Michaux's recovery, his return to full normality, would take weeks. Huxley had written that the same man did not return through the door of perception as had entered it, but Michaux insists that he must—the same him:

> *More than anything else mescaline demolished some of my effectual barriers, the ones that make me myself and not one of the others among my possible 'me's.' It took me weeks and weeks to reconstruct them and to shut myself inside them again.*
>
> —*Michaux, Miserable Miracle*

He also experimented with hashish (of which his observations are most reminiscent of those of Aleister Crowley), with psilocybin, and with LSD. Many of his discoveries are of interest to us. Writing of the evening after he had taken six ampules of mescaline, Michaux wrote:

> *My head was so tired I did not know where to turn for relief. I was experiencing in my head the same useless repetitions which on other days my pen had made visible*

> *[Michaux here refers to how for days he would draw only endless parallel lines]. What gave me the greatest relief, even more than recovering bodily sensations, which I had almost entirely failed to do, was to make my hand beat out a rhythm on the woodwork beside my bed.*

Michaux also found relief in high mountains. In fact it was only by going into the Alps that he felt he finally "returned to himself." A man used to dealing with images, he was acutely aware of how long it took him before he was able again to write his "own" way—without the repetitions that mescaline seemed to demand. Michaux complains that under mescaline, the mind is only interested in "covering ground," that it is unable to be panoramic or reflective. He distrusts the apparent clarity of the insights, even to the irony of recognizing that it was the illusion that he understood mescaline that led him to write *Miserable Miracle*.

Michaux gradually discerns a number of what he calls "starting points," noetic loci around which the storms of mental states may accumulate—the psychical equivalent of a low pressure system. There is the "infinitesimal, immanent, intrapsychic agitation," something like quantum fluctuations, which results in "inanimate" things becoming animated, with the consequent fear that one is no longer safe. Another he describes as an impression of floating freely in one's body, and hence no longer protected by will or self-control. The "starting point" of no longer being located in one's body, being "a kind of free spirit," results in the possibility of being invaded by presences, "someone who should not be there":

> *Presences of this order make no 'entry.' They are there, and one's territory is invaded. The kind of antechamber each of us possesses, which permits one to keep someone nearby at a distance, no longer functions. No more antechamber. The other person enters you. He violates your vital space. . . One is vulnerable, open to being traumatized, the threshold of suffering is instantly reached.*

Other "starting points" are that objects become charged with meaning, that certain sensations take up too much space, and that the compartmentalization and definition of ideas becomes difficult.

> *One wishes to say, "duh!"*

But Michaux kept going back for more, a testament to his poetic integrity. *Miserable Miracle* was published in 1956, *The Major Ordeals of the Mind* ten years later. It is only in the latter work, and at the end of it, that Michaux finds something truly transformative beyond the "banality of the visionary world," something other than colors, madness, disruption, derangement, and delusions of enlightenment.

He begins with a confession that there is an "unexplained immensity" that permeates a large part of every experience—that rarely has he been able to maintain awareness through an entire session. He admits that by clinging to whatever fragments of "sanity" he could, he went too far and was almost always swept away for the whole middle part of the experience, and frequently also the ending part—that the records of these parts are therefore "missing."

In the last chapter, this great champion of the intellectual tradition, this fellow traveler, presents what he calls the "Four Worlds." The four worlds are outside of the "natural world," what Michaux calls normal consciousness, and also outside of the "alienated world," the world of sensory derangement that had been the focus of his study.

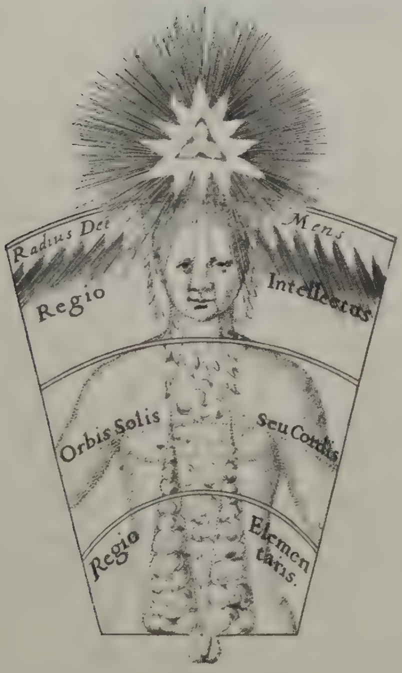
> *There is one possible way to abort madness, to win it over during the very moments you are subject to it, undermined by it; there exists a possibility of transforming the scattering, dissipating, dislocating, devastating, breaking, tearing, discoordinating convulsiveness into an ally, into the prop, the support of radiance and illumination.*

◆

MICHAUX'S FOUR "WORLDS BEYOND"

VERTEBRAE	*Key*
CERVICAL	Unity. Beyond "Beyond"
DORSAL	Harmonic Enstasy
LUMBAR	Valliant Warrior
SACRAL	Pure Eroticism

◆

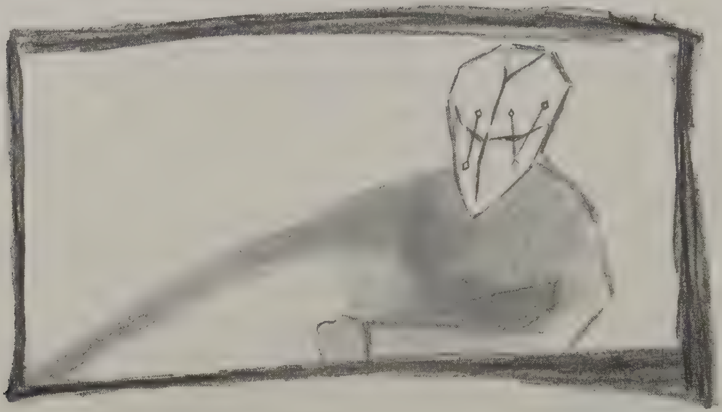


HEAVENLY MAN

The first of these worlds Michaux calls the world of pure eroticism, a place beyond even the possibility of fear, of extraordinary unity. It is a world beyond opposites, and once there, self-sustaining. Michaux states that it is linked to one of the sacral vertebrae in the spinal column.

He goes on that by inhibiting the impending orgasm, that by forsaking the security of the erotic and casting oneself back into the complete uncertainties of the current, one can find another world, emanating from higher up the spinal column, the world of unlimited valor. Chance, he writes, (or *luck*, we might say) plays a hand in whether or not a person casting themselves back into the madness will find this new world. It is the world of *heart*, where one is ready to meet any circumstance with valor, ardor, generosity, and gallantry. The key, he writes, is self-surrender. This world emanates from a vertebra in the lumbar region. This is the world of strength, the world of the warrior.

The third world radiates from the dorsal vertebrae. It must be gained by a kind of "transport," a trance. This is the world of exalted love, beyond all separations and divisions, beyond distractions. Different from the erotic, it is non-profane, non-judgmental, an infinity of gifts. It has a quality of hope. It is the perfect anxiety-free celebration. "A mystery that is celebrated in the most psychically naked way." Unreserved, it is harmony itself, filled with boundless radical energy. Michaux calls it *enstasy*.



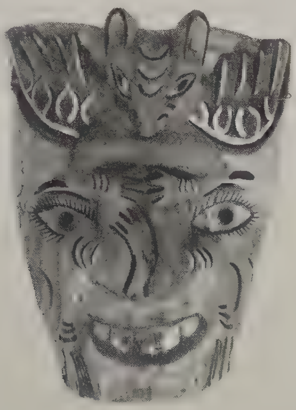
The last world, emanating from a cervical vertebra up through the cranium, is the world of exalted contemplation. Michaux refers to Blofeld's experience to show that even those trained in meditation or spiritual practices may remain completely lost for a long time, unable to find this center. On the other hand, others, by chance or natural inclination (karma?), are able to reach this state directly, without passing through the others. It is the place of absolute Unity. Suddenly, duality no longer exists: a psychic wind blows away conceptions and distinctions before they are born. One no longer needs to try to classify. "One is beyond, now."

> *These rare states, such as the sojourns in these four worlds, have become possible because of an abandonment, an acceptance, a yea-saying.*
>
> *Now each man is a 'yes' with certain 'no's.' After the unprecedented and somewhat counter-natural acceptances, one must expect recurrences of such refusals; however, there is a part that cannot be erased or reversed, which continues to function, living on the margins of the Unforgettable.*
>
> *Evolution in process . . .*
>
> *—Henri Michaux, final lines of Major Ordeals of the Mind*

The angels are cheering.

A triumph of mountaineering.

The Ally *Have you come full circle now? So that you can pray with us who have sat up all night here eating peyote? Will you be here when the water-woman enters in the morning? When the water-woman, as beautiful as the Goddess of Mercy, enters at dawn with food and water, when she takes your hand and wishes you the first "Good Morning" of your new life?*



CORRESPONDENCES, III

REALM OF PLEASURE	Visual Cortex
RITUAL EVENT	Confirmation
ROCK	Lava
SEASON	New Year
VIRTUE	Faith
SEXUAL POSITION	Yab-Yum
PHASE OF MATTER	Plasma
PLATONIC SOLID	Icosahedron
SIGN	Orion
SIN	Cupidity
SOCIAL EVENT	Birthday
SENSE	Sight
TAROT KEY	The Star
QUARK	Top

The Plant While Michaux was beginning his experiments with mescaline in France in the 1950s, in the United States peyote was being eaten by other poets in North Beach, San Francisco. Peyote was an integral part of the whole Beat movement and the San Francisco Renaissance and the circle of anarcho-pacifists centered around Kenneth Rexroth. Allen Ginsberg saw his vision of Moloch, immortalized in "Howl," while on peyote. Another San Francisco poet, Michael McClure, wrote "Peyote Poem" in 1958, a long "parajournalistic" exposition that Ginsberg called "the first drug poem in America."

I am on a mesa of time and space.

!STOM - ACHE!

Writing the music of life
in words.
Hearing the round sounds of the guitar
as colors.
Feeling the touch of flesh.

Seeing the loose chaos of words
on the page.
(ultimate grace)
(Sweet Yeats and his ball of hashish.)

My belly and I are two individuals
joined together
in life.

THIS IS THE POWERFUL KNOWLEDGE

we smile with it.

—Michael McClure, from "Peyote Poem"

"Peyote Poem" was widely distributed in the literary world, and provided many young poets with their first description of the effects of the plant, if not even knowledge of its existence.

The Medicine, History

> *You want to sit up all night with a bunch of Indians? Eat peyote? That sounds like fun to you? Well, ok. . .*
>
> *—Washo roadman*

In the early sixties a few spiritually inclined individuals from the white community began attending meetings of the Native American Church. Rick Mallory attended meetings with the Washo, and a group that included John and Marie Kimmey tried to incorporate as a church. Others, like Jimmy Hopper and Steve Elvin, moved to Taos where they were mentored by Little Joe Gomez and others. Ethnomusicologist Jack Loeffler attended meetings and made recordings. Hybrid groups, such as the Peyote Way Church of God, faced continuing legal fights to practice their religion openly. Weston La Barre, who was steadfast in supporting the Constitutional rights of the Native American Church, utterly distained these groups, including his colleague, anthropologist J. S. Slotkin who, during his years of study, crossed the line from observer to participant and actually joined the Church that he was studying. (La Barre also disparaged the "British eaters" from Havelock Ellis to Aldous Huxley as "spurious, meretricious, and foolish poseurs." Interestingly, he exempted Allen Ginsberg from his general condemnation of the counter-culture, stating that perhaps Ginsberg could be granted "the poet's franchise to experiment aesthetically with psychedelics because he brings back articulate writing of his experience.")

Matters of State and Liberty

As difficult as it may be to believe, it is actually a felony to grow peyote in the United States of America. That Grandfather Peyote has lived in North America for millions of years before any of us were walking evidently did not occur to the zealous legislators. We hope that they will correct this foolishness as soon as possible.

> *What if He came back,*
> *What if He came back as a plant?*
>
> *Would you let Him in,*
> *Would you let Him into your heart?*
>
> *—Guy Mount, "Peyote Song"*

At present, both mescaline and the *Lophophora* cactus, and any parts or preparations thereof, including seeds and hairs, are listed in Schedule I of the Controlled Substances Act. A Supreme Court decision in 1990 virtually eliminated any First Amendment protection for peyote under freedom of religion. Before that decision, it had long been the precedent that the Government had to show a compelling interest to abrogate freedom of religion in any way, and then to abrogate that freedom in the minimal way necessary, but the 1990 decision eliminated all of that. In response, a coalition of religious and civil rights groups, including the Native American Rights Fund, the Native American Church of North America, Eric Sterling and the Criminal Justice Policy Foundation, Robert Jesse and The Council on Spiritual Practices, and the American Civil Liberties Union, sought redress in Congress. Many religious leaders made statements before a committee chaired by Senator Daniel Inouye, including an eloquent and articulate presentation by peyotist Reuben Snake. Congress passed the Religious Freedom Restoration Act of 1993, reinstating the words of the Founding Fathers. This act was subsequently overturned by the Supreme Court in a case involving local zoning ordinances.

Matters involving the Native American Church have been mostly left up to the individual states. Efforts by non-Indian groups to obtain legal sanction for using peyote have thus far been unsuccessful, although the Peyote Way Church of God in Arizona is quite flagrant about their peyote use, and may win some of their many legal cases simply by boring the local police with their persistence. Yes, well, or maybe not. Membership in the Native American Church in Texas requires one-fourth Indian ancestry, and the Navajo NAC banned any non-Indians from participating. In some states, if the local Church community supports a non-Indian member, the courts may go along.

The fear and hatred toward the humble cactus that infuses the record of Ruiz de Alarcón in 1629 is still with us. Cactus growers have been convicted for including a single peyote plant in their collections. In one of the more poignant and iconic episodes in *TIHKAL* the Shulgins recount how a DEA agent dumped their (legal) peyote plant out of its pot and crushed it with his boot.

The Ally

We'll continue to pray, and to seek guidance from the Creator.
And to lobby our legislators.
And to sing our songs.

Thank you for sitting up with us here.

◆

SAN PEDRO CACTUS: TRICHOCEREUS SPP.

Common Names San Pedro.

The Ally It was Stefan's first experience of any hallucinogenic plant. *"I like it very much—I can move, I can talk, I can think."*

Related Species *Trichocereus pachanoi, T. peruvianus, T. bridgesii, T. cuzcoensis, T. fulvilanus, T. macrogonus, T. taquimbalensis, T. terscheckii, T. validus, T. werdermannianus* all contain mescaline, as do various species of *Stemocereus, Opuntia, Perksia, Pterocereus, Pelecyphora*, and others. And, of course *Lophophora.*

Taxonomy The Cactaceae are well-defined as a family, but the levels of genus and species are more confused. The cacti seem to have been caught in the act of active evolution, rapidly adapting to survive in the expanding xeric biomes of North and South America. In an excellent example of convergent evolution, many Euphorbiaceae from South Africa bear striking resemblances to the Cactaceae. (The flowers, of course, are quite different. The euphorbs all exude milky latex. And while the spines on cactus plants are modified leaves, euphorb spines are modified branches.)

Cactus flowers are "primitive," in a botanical sense—unspecialized, many floral parts. Since floral differences are often distinguishing features of taxonomic keys, systematists have been forced to use other, more variable, morphological features in the Cactaceae. Another difficulty for the taxonomically-minded investigator is that the cacti don't submit easily to the usual herbarium techniques for drying and preserving voucher specimens.

The genus *Trichocereus* is no exception to the confusion in the Cactaceae. There is hybridization and intergrading between *Trichocereus* and *Echinopsis*, and some botanists have now combined them, along with *Lobiva*, into a single genus. Chemotaxonomic studies have thus far not helped to clarify the picture, being marked by the same high variability as morphology. K. Trout, who has perused the available data as thoroughly as anyone, believes that if measured alkaloid levels were adjusted to account for the age of the plants, the nutrients available, the season, and the part of the plant sampled, the results might show quite a bit more uniformity.

A general rule-of-thumb is that *Trichocereus* spp. containing usable amounts of mescaline are all from the candelabra-shaped group—plants branched from the base with stems that are usually erect or at least decumbent.

Trichocereus spachianus has generally slender joints, 5 to 9 cm thick, and a central solitary spine at each areole. Of the stout jointed species: we offer a key based on Backeburg.

◆

A. Spines very stout, formidable	
b. Spines yellow	*T. terscheckii*
bb. Spines dark brown	*T. coquimbanus*
AA. Spines slender, 1 to 7 cm. long	
B. Ribs 4 to 9 (or even 14)	
C. Spines yellow (at least when young)	*T. bridgesii*
CC. Spines brown	
D. Plant (often, not always) dark green; spines few at each areole or wanting or 3 to 7 but very short	*T. pachanoi*
DD. Plant light green (except for T. macrogonus); spines several at each areole	
E. Spines needle-shaped, usually less than 3.0 cm long	*T. macrogonus*
EE. Spines awl-shaped, tapered, up to 7 cm long	
F. Spines swollen at base; young growth green	*T. cuzcoensis*
FF. Spines not swollen at base; young growth glaucous	*T. peruvianus*
BB. Ribs 16 or 17	*T. chiloensis*

◆

The above key is a bare bones attempt to make some sense of the confusing systematics for beginners. K. Trout, in a personal communication, characterized it as "brave," but I think he really meant "foolish." I can't resist reproducing one of his thoughtful comments:

> *You might want to stress that people need to know their strain if choosing a Trichocereus anything for an ally. Like establishing any relationship, it takes some conscientious thought and action. If wanting a mate one would not just go out to a crowd of people, randomly grab the first human of the opposite sex and expect it to all just flow from there. Working with plant allies is rather similar. Careful choices and evaluations of mutual suitability followed by establishing a mutually respectful loving relationship is how I would recommend approaching the issue.*

(Aw, c'mon. You've never done it with "just anyone?")

The Ally

> *We were walking in the hills along the coast, in and out of little stands of redwoods. It started raining hard but none of us considered seeking shelter. I think that every salamander and newt ever created was out and walking.*

Part Used The whole plant, or just the outer layer.

How Taken Various ways. Drunk as a concentrated decoction, swallowed as tar balls, or nibbled fresh during a day of harvesting. The dried cactus may be powdered and swallowed in capsules (a lot), or simply swilled down with some juice. A foot and a half of *T. pachanoi*, or one foot of *T. peruvianus*, is a usual dose. Expect variation. It is nice to have extra on hand, to take at the one hour point, if the medicine is not strong enough.

The Ally

> *I saw her car in the parking lot as I walked in. I wondered if I should turn around, if this would be a mistake, if she would attack. It was the end of something, but would it also be a beginning? "Bring it to the circle," they had told me. I shouldered my drum and kept walking. I could see the kites about half a mile down the beach, climbing and diving. Bring it to the circle. Yes, this, my circle, now hers also. If it got ugly I could leave. Or not. Laugh. Sing. Dance in the sand. I was late so everyone was already gathered and holding hands. She saw me, smiled, and opened a place beside her.*

Effects Psychedelic, entheogenic, medicinal. Visionary. Occasional vomiting, depending on dosage, preparation, and what's happening.

Chemistry TRICHOCEREUS PACHANOI, T. PERUVIANUS: *Trichocereus pachanoi* is reported to be 93.5% water. This will of course vary with the growing conditions of the plant, as will the alkaloids. A quick rule of thumb is to figure that dried material is ten times as potent as fresh. If only the outer part of the cactus is dried, the alkaloid content may be higher.

Analyses of *Trichocereus pachanoi* yield a range of 25 to 120 mg mescaline per 100 grams of fresh cactus. That is a lot of variation. K. Trout, who has extensively summarized and commented on the various papers, believes that the low figure of 25 mg per 100 grams is characteristic of young, cultivated plants, and that higher percentages of alkaloids may occur in mature specimens.

Trichocereus peruvianus contains as much as 80 mg mescaline per 100 grams of fresh cactus, according to published analyses. One analysis found 50 mg of mescaline per 100 grams cactus, but some other alkaloid, perhaps an isoquinoline, present at twice that amount. Another analysis, by Agurell, found no mescaline but did find tyramine. Agurell used plants grown from seed in Europe. K. Trout adds that persons purchasing material sold as *T. peruvianus* have reported activity in slightly less than half the cases, by bioassay. Most of the reports of weak activity seem to come from one or two particular clones that happen to be widely cultivated. Stronger clones are becoming more and more available through conscientious horticulturalists, and experienced cactus handlers have reported very high activity from some clones. This high activity, coupled with the fast growing rate and general heftiness of *T. peruvianus,* has made it a favorite of many cactus gardeners.

TRICHOCEREUS BRIDGESII, T. VALIDUS: Both of these species are reported to contain over 25 mg mescaline per 100 grams of fresh cactus. 3,4-Dimethoxyphenethylamine and 3-Methoxytyramine each account for one to ten percent of the total alkaloids in *T. bridgesii.* Trout thinks that *T. bridgesii* may be a best choice for those interested in edibility.

TRICHOCEREUS MACROGONUS, T. WERDERMANNIANUS, T. TAQUIMBALENSIS, T. TERSCHECKII: All reported as containing 5 to 25 mg mescaline per 100 grams of fresh cactus. 3,4-Dimethoxyphenethylamine and 3-Methoxytyramine are found in both *T. macrogonus* and *T. werdermannianus*, each as one to ten percent of the total alkaloids. In addition, *T. macrogonus* contains tyramine, as one to ten percent of the total alkaloids. Hordenine accounts for one to ten percent of the alkaloids in *T. taquimbalensis. T. terscheckii* often contains trichocereine (up to four times as much as mescaline), and traces of anhalonine. Overall potency of *T. terscheckii* ranges from "mild stimulant" to "stronger than *pachonoi*" (Trout).

Values below are typical, at best. "Your own mileage may vary."

Trichocereus spp.	Mescaline	3,4-diMEO-PEA	3-MEO-tyramine	other
	per 100 g fresh cactus	as % of total alkaloids		
T. bridgesii	> 25 mg	1-10%	1-10%	
T. cuzcoensis	0.5-5 mg			
T. macrogonus	5-25 mg	1-10%	1-10%	tyramine 1-10 %
T. pachanoi	25-120 mg	1-10%	1-10%	
T. peruvianus	0-80 mg			tyramine 1-50 %
T. taquimbalensis	5-25+ mg			hordenine 1-10 %
T. terschekii	5-25 mg			trichocerine, to 80 %
T. validus	>25 mg			
T. werdermannianus	5-25+ mg	1-10%	1-10%	

Pharmacology

Mescaline is the principal active ingredient: it acts on the 5HT-2 receptor (the serotonin receptor). That is as much as we know, and how much it explains is debatable. Secondary alkaloids, of which there are far fewer than in peyote, have mild somatic effects or no effects at all. This is in contrast to peyote, where pellotine and lophophorine are present in pharmacologically significant quantities.

3,4-Dimethoxyphenethylamine can be present in amounts of one to ten percent of the total alkaloids in many of the mescaline-containing *Trichocereus* spp. Sasha Shulgin took 1000 milligrams of this substance with "no effect." It was once thought to be a marker of schizophrenia, having been found in the urine of mental patients. The findings are now discredited, but it is interesting that 3,4-DMPEA is cross-tolerant with mescaline.

Hordenine is found as one to ten percent of the total alkaloids of *Trichocereus taquimbalensis*. Large doses of hordenine can raise blood pressure, increase the heartbeat, and can paralyze frogs. Arthur Heffter found 100 mg (more than would accompany an active dose of *Trichocereus taquimbalensis*) to be without effect.

Tyramine often occurs as one to ten percent of the total alkaloids in *Trichocereus macrogonus* and *Trichocereus peruvianus*. Tyramine is adrenergic, sympathometic, and a stimulant, but is unlikely to contribute significant effects in the quantities found in the two cacti listed here, with the possible exception of *T. peruvianus*. The presence of a strong monoamine oxidase inhibitor (MAOI) would significantly potentiate the action of tyramine, which would probably not be pleasant. According to K. Trout, this is not the case for harmine or harmaline, which are readily displaced by tyramine.

3-Methoxytyramine is reported as being inactive, but is probably similar to tyramine. Another name for this alkaloid is 3-Methoxy-4-hydroxyphenethylamine. A related substance, 3-Methoxy-4-ethoxyphenethylamine, MEPEA in Shulgin's parlance, is a short-acting mood elevator at dosages of 300 mg, and Sasha adds a note in *PIHKAL* that the amphetamine analog of 3-Methoxytyramine (with a methyl group at the end of the carbon chain) "might be worth a test drive."

Trichocereine occurs in relatively large quantities in *Trichocereus terscheckii*, one report listing it as up to four times as abundant as mescaline. Half a gram is reported in the literature as without effect, larger quantities causing a heaviness in the stomach.

Other alkaloids, such as 3,5-Dimethoxy-4-hydroxyphenethylamine, 3,4-Dimethoxy-5-hydroxyphenethylamine, and anhalonidine, are present in only trace or insignificant amounts in the *Trichocereus* spp. listed here.

How Taken Nibbled fresh, like eating a somewhat bitter cucumber.

The Ally

> *In an hour I could feel the medicine pulsing through me. I left the group and started walking into the wind, towards the sun. A special sparkle on the sand. Mescaline sparkle. Undulating ribbons of sand moved towards me across the beach. I ignored the colors, the glow, the special filmy way the water looked—I wanted something else. The sand had hardened into a zebra expanse of inch-high ridges and valleys.*

> *"Fingerprints of the wind,"*
>
> *I thought. I wanted the wind that blows inside my fingers, the one that forms those ridges.*

The Plant San Pedro is a large columnar cactus that can reach a height of twenty feet. Its home is in the Andes, but it grows well in both tropical and temperate zones and is a favorite of cactus gardeners worldwide. *Trichocereus peruvianus* is significantly stouter than *T. pachanoi*. The spines of *Trichocereus pachanoi* are generally short—one centimeter down to practically nothing. *T. peruvianus*, by contrast, has large spines that are quite formidable. Cut them off before harvesting.

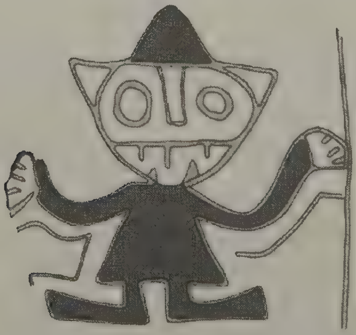
The "Juul's Giant" San Pedro, (species uncertain), rivals *T. peruvianus*, in stature, but is almost completely spineless. This is a big plus.

The other *Trichocereus* spp. are all more or less spiny, and vary considerably in size and habit. They are all very satisfying to grow.

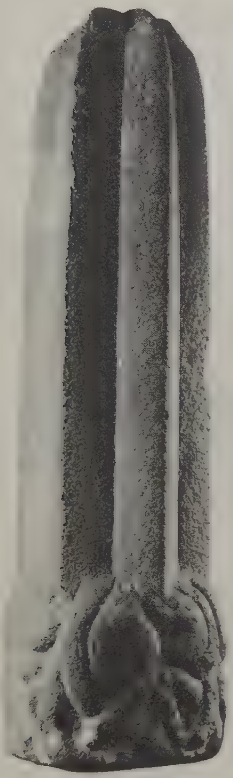
The Ally

> *It's the wind, the chill when the sun sets. We huddle. Homo sapiens, the huddling species. We huddle, talk some funny things, share visions—a kite becomes a hummer, an opening, a hole through this world to another. We laugh at ways we tumble through the opening, that opening or some other, trip through and then come back. The huddling helps that. Or we moan, the mescaline sending waves of energy up and down our spines, orgasmic waves and shudders and evocations, and all of us lying together, holding, burrowing for warmth, comfort—this primal craving, deeper than sex, that we so rarely satisfy. It is our answer to the great chill, to death, to the infinity of space.*
>
> *Every so often, one of us, warmed, crawls out and disappears onto the beach. Each returns.*

History What appears to be a San Pedro cactus appears in a bas-relief from the Old Temple at Chavín de Huántar, in the Peruvian highlands north of Lima. A zoomorphic being with jaguar-like fangs and a headdress of snakes is depicted clutching a long



STAFF GOD, PERU, CA. 2000 BCE



VOLCANIC STONE,
MEXICO, CA. 1200–1521

column of *Trichocereus pachanoi* in his clawed hand. Other depictions of the cactus are found in Chavín textiles, and in Nazca, Moche and Chimú ceramics.

The Old Temple dates from the Urabarriu-phase of Chavín culture, 900 to 500 BCE. Chavín de Huántar was located at a strategic trading crossroad, with routes both to the coastal settlements to the west and also to the eastern slope of the Andes and the Amazon basin, where they would have had access to *Anadenanthera* snuffs. The Chavín culture has been called the "mother culture" of the Andes.

The cactus deity may be a form of the "Staff God," an example of whom has recently been found at a site in the coastal lowlands incised on a four thousand year old gourd. The Staff God appears in the "New Temple" at Chavín de Huántar, built five hundred years after the Old Temple. In that depiction, the pillars held by the god are highly stylized and not recognizable as the columnar cactus, but such they may be. The Staff God remained an important deity long after the collapse of the Chavín culture, becoming a common pan-Andean figure.

While the ceremonial importance of the San Pedro cactus to the Chavín culture is clear, details as to its actual use in the culture are lacking. It would be most interesting to know if the use of the plant was general, or was restricted to shamans or to a priestly class. Did use of the plant tend to mitigate or to support hierarchical social structures? Were the shamans included in the government? If so, were they marginalized and eventually "kicked out" of the court, as they were in China—the shamans taking to the hills and the rulers merely co-opting their images?

Today, San Pedro is used by curanderos and curanderas in the north coastal region of Peru. The area is predominantly populated by mestizos, many of whom know little of the pre-Hispanic culture of their area. The native peoples were ravaged by the invaders in the sixteenth and seventeenth centuries, and according to Wade Davis (1983) no indigenous languages, textiles, farming practices or social organization have survived.

While the use of San Pedro cactus is undeniably indigenous, the curing ceremonies are a syncretic mixture of Christianity, shamanism, and magic. The separation and identification of the European and indigenous elements of the ceremonies is difficult. Perhaps it is the very syncretic, mixed nature of Peruvian healing that make it so accessible to us, at least theoretically.

> *There are three types of sickness—'natural' sickness; sickness from witchcraft, from mental induction; and a third from potions put in food or drink—and the 'tracking' is nothing more than going back to look within the effects for the causes of a sickness. It is done at night for a reason: because at night the individual, in the dream state,*

> *opens within himself the principle of 'transitoriality,' permitting himself to receive and transmit his emotions and the experiences of his life.*
>
> *What do we look at? The color of the aura, which is a reflection of the person's personality. Everything that he has done before and which has contributed to alienation, to sickness, to fear, to apprehension, to anxiety leaps forth at that moment. Why? Because the San Pedro and all the other herbs help us. They make one vibrate. They make one light up. Each person has a special vibration jointly with the master and with the elements that envelop him. In a curing session this 'vision' develops by means of the potion of San Pedro and the other herbs.*
>
> *—Eduardo Calderon*

The center of the ritual layout is the altar, or *mesa*. Swords and daggers are stuck into the ground. Crystals, sticks, and coins abound, flanked by little cups and bottles filled with herbs and power plants. There are pictures and there are candles. It is an altar with which anyone familiar with the Western magical tradition would feel at home.

two rifle cartridges
a snake carved in wood
a phallic stone
a vulval shell
a ceramic frog

The altar is the laboratory workbench: a magical textbook of the ritual and at the same time the alchemical retort, the place of mixing and transmutation.

crystalline minerals
a wooden bowl in the shape of a bird
a pre-Columbian clay whistle
four books

According to Donald Joralemon (1984), the typical mesa is divided into three parts. On the left are the poisons: poisonous plants, dark stones, pictures and other objects connected to sorcery and the dark powers, the forces of life-denial. On the right side of the mesa are the medicines: healing herbs, pictures of saints, shells—the powers of light and life. In the middle are emblems of the healer, the mediator: lodestone, reflective mica, a picture of St. Cyprian—all the powers of reconciliation and transformation.

a bottle of aguadiente
a lodestone
an owl's wing
an iron staff

The alchemical transmutation is not only represented in the spatial placement of the ritual objects, but there is a movement through time. Objects from the left side of the altar are manipulated in the first part of the ceremony, gradually being moved to the center as the medicine takes hold and the invisibles become seen, and then to the right side in the last phase of the healing, recollecting and reinforcing the lessons and the curing, the allies for setting out on a new path.

> *Thus, the ritual creates in the temporal dimension a movement from left to right, from negative, past, and harm to positive, present, and cure. In between is luck. Taken together, the left-to-right connotations of both mesa symbols and ritual sequence are entirely appropriate to the therapeutic object of the event; for the patient, a healing ritual is a passage from life-taking to life-giving forces, from sickness to health, from left to right in the language of the shaman's ritual.*
>
> *—Donald Joralemon (1984)*

"Luck" is a complete synonym for "power." Tobacco is such an integral part of the ceremony that it could really be considered an admixture plant. Some curanderos mix in *Brugmansia* (or *Datura*).

Aguadiente, sweet lime juice, tobacco,
drunk through the nostrils.

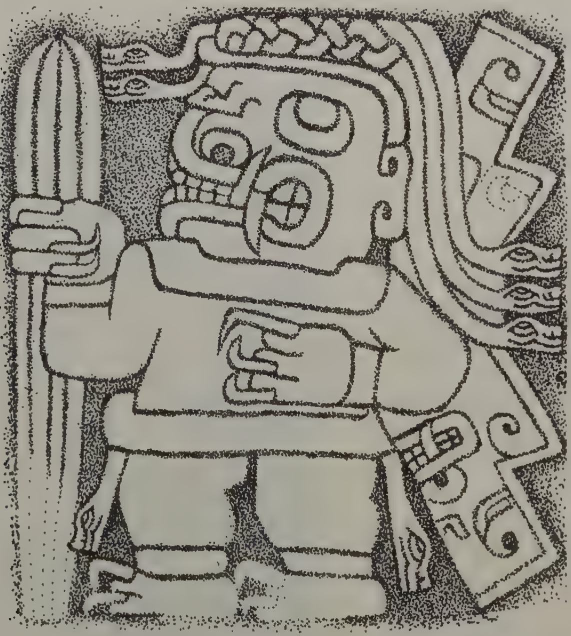
The cosmic dualism would perhaps be more at home in Persia than in South America—from Zoroaster to the Manicheans, through Alexandria and Damascus, with smithcraft, to the alchemical laboratories of Geber and Bacon. The mesa is the gnosis. It's all heretical, and the Church threw it all out. The orthodox altar is exclusive, the darkness is what's outside, beyond the sanctified walls, beyond the fenced boundaries of cultivation. The magician's altar includes.

ALTAR, PHOTO BY J. M. NASIM

Con Cipriano poderoso,
Cabalista y cirujano, viejo caminante
Y en los cuatro vientos y los cuatro caminos,
Y en las veinticinco mil cuentas,
Justicieras, curanderas, y ganaderas,
Ajustando con mis buenos rambeadores, mis sorbedores.
Con buenas cuentas.
Así vengo parando,
En todo su encanto y su poder.

With powerful Saint Cyprian,
Cabbalist and surgeon, old traveler,
And with the four winds and the four roads,
And with the twenty-five thousand accounts,
Good, curing, and evil,
Adjusting with my good assistants, my absorbers,
With good accounts,
Thus I come raising,
With all his enchantment and his power.

—Eduardo Calderon, Raising the Mediating Center



BEING WITH CACTUS,
CHAVÍN, CA. 800 BCE

Poesis

There are two basic methods: the wet way and the dry way. For the dry way, some people use only the outer part of the cactus and discard the tough inner core, believing that it is the outer layer that contains most of the alkaloids. The truth of that belief, however, is not so clear—some analyses show that the inner pith contains significant amounts of mescaline. Still, for drying, the fibrous core is more difficult to deal with than the fleshy parts. But for the wet method, I see no reason not to use the whole cactus.

Which of the methods one uses is a matter of personal preference, but should also depend on the particular *Trichocereus* species one is using. Some lend themselves more easily to the wet way, others to the dry way.

Juul's Giant lends itself to the dry way—there are hardly any spines that need to be pulled out. One cactus man reports that *T. bridgesii* and *T. macrogonus* can be whizzed up in a blender and that all of the solid matter will settle to the bottom, which would make the wet extraction ideal. Unfortunately, not all specimens of the above species perform so obligingly. *Trichocereus* spp. are generally loaded with surfactants that create a foamy mess exceedingly difficult to strain. Always wear heavy gloves when handling *Trichocereus*: spine wounds are painful and can easily become infected.

The *Wet* Way

If the cactus has spines, cut them off. This is not really necessary for *T. pachanoi* or Juul's Giant, as their tiny spines can be strained out of the liquid. Chop or grate the cactus like zuchini for a souffle. The finer the better. A food processor simplifies this job, but you don't want a messy puree. You need a large canner, or several large pots. Use enough water, but not too much—eight quarts or so for four to eight feet of cactus is plenty, if not doubly enough. Adding lemon or lime converts the alkaloids to the soluble citrate salts, but this is not done in Peru, where lemons would be considered "wet," while "dry" is considered to be more powerful. Some think lime has a better flavor than lemon.

Simmer your zucchini until it is well-cooked. I used to do this for several hours, but I no longer think that is necessary. Strain off the water, and repeat. If you are using limes, then that is all you need to add to the second extraction, perhaps along with some additional water. Heat it up again and then squeeze all of the liquid out of the pulp with a brewer's bag or cheesecloth and combine the extracts.

How far to evaporate down the liquid is a matter of taste, in the literal sense. The thicker the liquid, the stronger the taste but the less you have to drink. I like to boil down to about one-half to three-quarters of a cup per dose, to just before the solution gets syrupy or begins to caramelize. Each of the active species has its own distinctive flavor, some bitter and brown, others molasses-like, sweet and green. None of them are what one could really call palatable, but as medicine goes, well, not so bad. In general, the less cooking, processing, and heat used the better.

Some cactus people boil the menstruum all the way down to a caramelized, candy-like tar. The tar is made into small balls and the balls swallowed whole. But

I think the balls are more difficult to digest than the liquid; I'd rather just drink the foul liquid, rinse my mouth with water, and have an easy stomach than swallow balls or scores of gelatin capsules and put the work on my digestive system.

The Ally

TR set out a circle of luminarias. Over a hundred paper bags that we quarter-filled with sand, a candle in each. One large circle around our whole camp and another, like a runway, set to catch the last rays of the sun. It was exquisitely, perfectly, beautiful—a magical fence that captured the energy and gave us safety. To us the enclosure was palpable and the boundary lines were obvious, but to casual strollers on the beach it was invisible and permeable and they'd walk right on through. That seemed, somehow. . . just right.

The Dry Way

Start by cutting this hefty cactus into twelve to eighteen inch lengths. Stand one of these sections up on end. With a slim knife slit each rib its entire length, from the high point of the ridge to the tough fibers around the center of the cactus. Do this for each rib. Then, again slicing downwards, cut off each rib so that it falls away into two long strips and lay them out on a drying rack. Repeat for each rib. After that, the cactus body will be more or less cylindrical, with strips of green skin along what had been the valleys between the ribs. Usually it is easy to make another series of cuts, centering on whatever green outer skin is left on the cactus. The cactus seems to tell you what the correct thickness is—my strips are usually around three-eighths of an inch in thickness. The point is that they have to dry—the thicker the strip, the longer it takes to dry. If the cactus is particularly thick, I continue cutting off strips of the white pithy flesh until I get to the tough core.

Summertime and hot sun dry this stuff pretty quickly—days, not weeks. You want it crispy dry, so that you could use the strips for wind chimes. Sometimes there will be a few spots on a strip that won't quite dry because they are too thick. Cut these areas open with a few extra slits and give them an extra couple of days. They will dry.

When all is dry—crispy crispy dry—you powder them. While primitive technologies such as mortars or rolling pins will do the job, I like to use a heavy-duty blender. Break the cactus strips into lengths that will fit into the blender. Don't cram it—six or eight pieces of the dried cactus is enough for most blenders. Powder it up. Many short bursts of blending are usually better than just leaving it on—which can cause the motor to get hot. When the cactus is mostly powdered, sift it into a bowl through a strainer, like flour. Return the coarse parts back into the blender for another try. Add three or four more strips of cactus and repeat until done. When you are finished you will have a nice bowl of very fine, bitter, cactus powder.

Juul's Giant is about one and a half times as potent as *T. pachanoi*, and somewhat less potent that *T. peruvianus*, so figure twenty grams of powder a minimum dose, thirty to forty grams a goodly dose. That is a lot of powder to put into gelatin capsules, so the easiest way is just to drink the powder as a swill, in apple juice or something.

The Dry Way There is still another extraction possibility, to purify to crystal. This is easiest, I now think, beginning with the dry method described above, though is can be done from the liquid also. The advantage of purification is that you can precisely calibrate your dose. And you don't have to swallow a bunch of plant material. On the other side, 400 milligrams of purified alkaloid hitting the stomach with no buffer is not always so great either.

Effects Divinatory.

How Taken Short dried strips may be held in the cheek as a pleasant mild stimulant.

The Ally

> *Sometimes the big question would start to come up between us—innuendos of blame or curlicues of expectation and the medicine would pull one of us away, would walk me to someone else or out to the ocean, our dancing in all of this, in the Great Dance. It was the way it should be: simple, clear, easy, at least for a day.*

The Plant They are all very satisfying to grow.

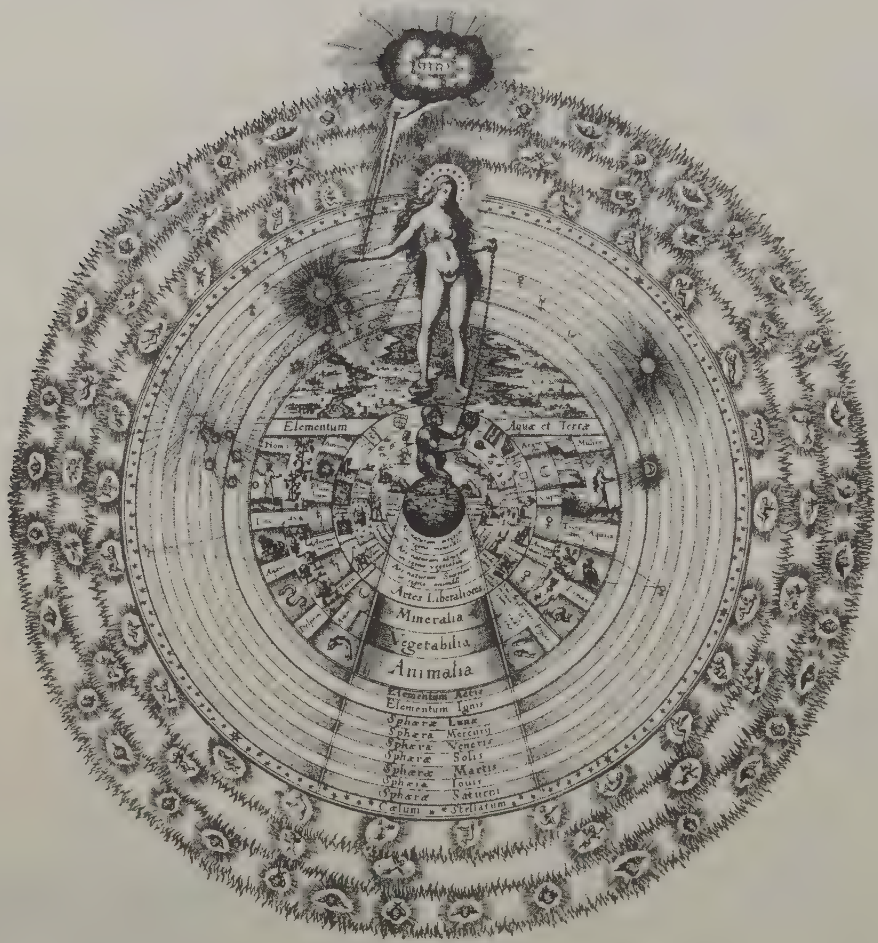
The Ally

> *We reached each other in the huddle, each from an opposite side, our friends between us or on top of us; we reaching around and under them until our faces and mouths finally came together and then swirling out into the cosmos—all the beauty that we knew and potentiated, our eroticism, our love, given to each other and now shared, radiated to the bodies around us, our friends, our group. Their comments surround us: jokes, thanks, praise, oooohs, aaahs, whatever.*
>
> *If we could put that in a bottle and sell it,*
> *Babe, we'd have it*
> *made.*

Effects Orgasmic. Medicinal. Healing.

The Ally

> *We walked out after midnight. It was very dark.*
>
> *Every dark shape along the trail became one of the Messengers.*
> *Each one of them told me something.*


Elementum
Aquæ et Terræ
Artes Liberaliores
Mineralia
Vegetabilia
Animalia
Elementum Aeris
Elementum Ignis
Sphæræ Lunæ
Sphæra Mercurij
Sphæra Veneris
Sphæræ Solis
Sphæræ Martis
Sphæra Iouis
Sphæra Saturni
Cælum Stellatum

ON CIRCLES

The Power of the World always works in Circles.
—Nickolaus Black Elk

I can't think of any part of our praxis more crucial than the circle. In many ways, the circle is more important and essential to our work than the medicine itself.

Many have faltered here, have stumbled, closing themselves off.

Circles are probably our first form of social organization, perhaps a geometrical consequence of the radial symmetry of the campfire, or just from the informal gatherings of women making baskets with their feet together. Circles have their own dynamics, and even an intrinsic maximum size—you have to be able to hear the person across from you when he or she speaks. When a circle grows beyond a certain size, it breaks up, which may be some of the reason there are four thousand languages in the world, and at least that many that are extinct.

We are interested in a particular kind of circle, the medicine circle. Medicine circles are patterned (often pretty loosely) on the circular forms of Native Americans and of other indigenous peoples, particularly the Peyote Circle. A few adventurous non-Indians who visited and participated in these circles recognized their formal and spiritual value, and over the last half century a new form of the circle has emerged—the psychedelic medicine circle.

Much of the work was done by women, in women's circles. One male observer said that an early circle in Bolinas was the beginning "of a kind of matriarchy." Poet Joanne Kyger remembers it less dramatically. There were many others. As Kathleen Harrison once stated it, "How often do you want to spend your trip talking someone down?" The structure of the circle itself avoids most of that. It keeps the energy focused, and provides safe boundaries and channels for the spiritual enthusiasm.

Some circles are very informal—friends in a community who get together to mark the turnings of the year, solstice or equinox, or beltane or samain. Sometimes a circle will emerge devoted to the exploration of one particular medicine, such as *Salvia divinorum* or ayahuasca or 5-methoxy-dimethyltryptamine. Pagans have been devoted explorers of the circle form for many years.

Many circles are led by professionals who charge for their services. Some of them are quite excellent. Others are led by invitation, by someone in the community recognized for their skill and expertise. Other circles are leaderless.

Leaderless circles work best if most or all in the group are or have been leaders themselves, or have equivalent experience. In a leaderless circle, better called a common circle, the leadership is left floating, so each member has to be ready to take charge and to give direction at any time during the whole process. While this lack of formal hierarchy can lead to chaotic moments, it is that very unpredictability that can lift the experience to levels that could never be attained in programmed sessions.

Should I speak? Should I do something? Is everyone waiting for me?

In a common circle, group coherence is essential. It is best if the group meets regularly, with the same people, or with the same core group, to develop the trust that is such a powerful aid for breaking through to new manifestations of self, to being able to welcome in orphaned spirits or other long neglected or avoided responsibilities.

Your author, as part of his research, once wrangled an invitation to a men-only circle, a common circle which I will henceforth call "the Bad Buddhas" group. Before anything he was made to undergo a terrifying initiation rite, at which he was taken to an eldritch grotto, stripped and painted with ocher, and then forced to worship hellish chthonic idols. He had to cut himself with a knife and sprinkle the blood on the sacred clitoris of Kali, after which he had to lick it off. Only then, after being sworn to secrecy on pain of permanent insanity, was he allowed entrance to the Mystery.

You just made that up. You're trying to write a best-seller again.

You're right. What really happened is secret.

Unlike most circles, which have learned to have certain rules and boundaries, such as "no acting out," or "no destruction of property," these Bad Buddhas, other than a pledge to stay in the circle, have left the rest frighteningly open. Even physical challenge and violence, while rare, is not de facto out-of-bounds.

Oh you macho man. . . you're such a macho man . . .

The Bad Buddhas begin with an invocation of the four directions, which, actually, in their case, is seven directions.

O Spirit of the East:
freshness of spring and crystal mornings;
new blood and rising sap;
piercing, flash, fingers, and sharp thought;
white dawn, you are welcome here,
welcome us.

After the invocation, the *talking stick* is passed. The passing of the talking stick is called a *round.*

In some circles the rounds are continuous, in other circles there are rounds at certain specified times, such as at the beginning (usually called the "intention round"), and at the end (called the "closing round"). How the rounds are called, and when, depends on the circle and how it is structured. In circles with a leader, the leader usually calls the rounds. In the common circles, the middle rounds are called by anyone, but subject to general agreement.

Time for a round?

Then the Stick is passed. It is a time to check in on everyone. In some circles everyone is expected to offer a song, a sung prayer or poem or invocation. The Bad Buddhas, in their laissez faire way, encourage song, but accept any words that fit. Sometimes a whole round is spoken—each person talking about how the night is going for them, what kinds of things are going on, what they have seen. Other rounds are extra-linguistic—spontaneous chanting or glossolalia.

Or played on musical instruments
or just with a rattle.

Rounds anchor the circle, they bring everyone back and refocus the energy onto the medicine. This is good.

O Spirit of the South:
warm afternoon on a golden field;
a sunny beach and a banquet of fruit;
welcome is your gift,
and generosity our response.

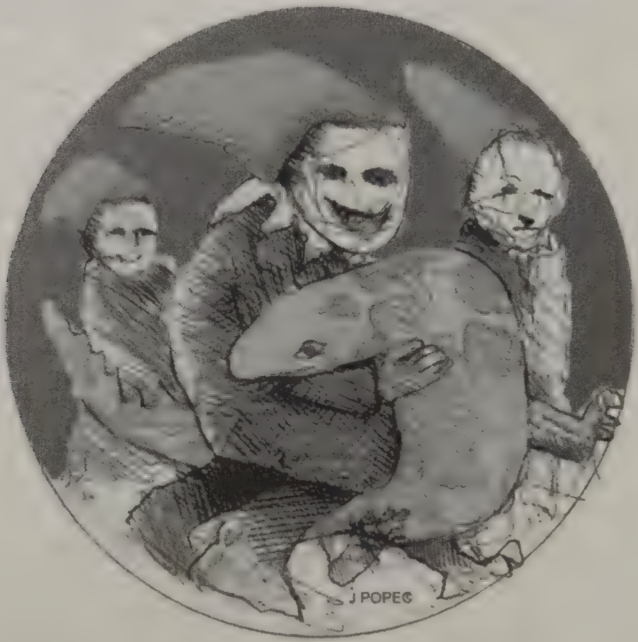
Some circles, especially circles of friends who know each other, maybe a semiannual equinox or solstice circle, begin with MDMA, and move to a hallucinogen several hours later, LSD, mushrooms, or phenethylamines such as 2-CB or 2-CI. Circles meet at wonderful places: beaches, meadows, groves, or deserts. Or someone's house. Community ties are reestablished, problems talked out. The gods are welcomed and the earth is thanked.

O Spirit of the West:
red sunsets and seductive glance;
a soft kiss that lingers.
You've enraptured the world;
we go with it.
Your bed, our bed,
in love, together.

Some circles have a therapeutic intention—some of them have a pretty serious feeling and some of them are decidedly somber. Such restricted, church-like limitations of the sacred seem dated, but some have more experience in these matters than I.

The Bad Buddhas, alas, are at the other extreme. Irreverence is rampant, laughter excessive. They seem to be uncompromising in their quest for absolute freedom. From rumors I've heard, some of Alan Watts's circles were like that.

License, sounds like to me.



BAD BUDDHA INITIATION, J. POPE

Experienced professionals who have visited the Bad Buddhas have left muttering and shaking their heads. How could any spiritual work get done amid such chaos?

O Spirit of the North:
Wild chaos on a craggy peak;
rocks carved the slow way.
"Give us the strength to face the North Wind,"
  our elders prayed.
Deep chill. Dark clouds. Alpine meadow.
You are welcome here.
You are not different from us.
Delight.

Everywhere we look at circles, the circles of those who have been making circles for a long time, whether in desert hogans or Amazonian clearings, we find song. Song is the ladder. Song is the bridge between worlds. Spirits live in songs and respond to them; they give songs and they are transformed by songs. Song is the mediator, the quicksilver that lives in both realms. In circles that have been together for a long time, one can hear songs of spectacular and heart-wrenching beauty.

Somehow songs are able to thrive in spaces where speech is impossible, in spaces where plants know how to sing, and animals to understand them. Beyond certain levels, ordinary speech will not suffice. It's too complicated. Ordinary speech brings in issues of identity and mundane history, it can force the creation of boundaries and distinctions that have no meaning in the multi-dimensional world of the medicine. For this reason, both ayahuasceros and Navajo road men sing.

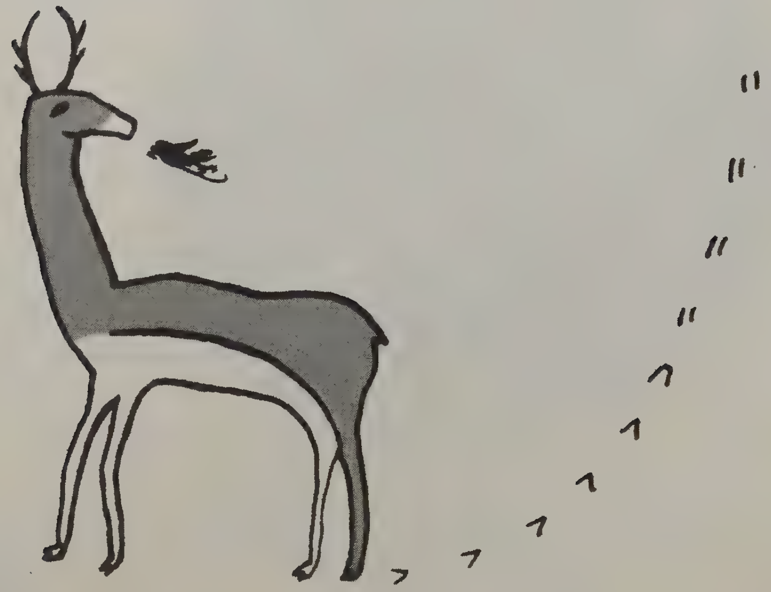
O Spirit of the Sky.
Swift angels and new songs.
Our life, unseen.
A hint of frolic, and the home of stars.
You are welcome here.
Fill us,
and we pass it on.

Circles are about renewal and healing and community building. They are the antidote to alienation and the foundation of any tribal practice. Circles are our link to the ancient ways and to the untold millennia of our *homo sapiens* heritage. All of the continents in all of the ages and pre-ages of human existence are linked by circles.

O Spirit of the Earth.
Root home and mother lode,
decaying bones and ghost stories.
All our ancestors, part of us.
Great Mother, great dark, great womb,
and the path we walk upon.
You are welcome here,
we, your children.

If you can't find a circle, start one.

O Spirit of the Center.
where we return,
Where we question and search,
and find nothing?
What? This! That!
That too!
Welcome, friends. Welcome us.



HOW TO MAKE A TALKING STICK

The *talking stick* is the central medicine of the circle. It comes to us through the Native American Church, and is found in many kinds of circles, not only medicine circles. Anarchistically-inclined groups from Buddhists to certain peace action groups use some form of the talking stick as an alternative to the chairman/Robert's Rules of Order organization. Sometimes it is a conch, sometimes a small stone. Sometimes it is whatever is handy. In secular contexts, the talking stick gives the floor to whoever is holding it—that person speaks without being interrupted until he or she is finished.

In a medicine circle it is the same, but power is involved. The talking stick is a magical instrument, a channel, a bridge to the spirits, to the place where songs come from. Since such magic has the power to heal, care must be taken in its construction. Remember that medicine is a gift, and gift is poison, so the stick needs mojo. The stick has to be able to bring people out of themselves, beyond themselves, so that they can do things they have never done before. Remember the MEAD principle:

> *Magic is Empowerment by Attention to Detail.*

Talking sticks come in various sizes, from a one-handed rattle to a full cane. Size is a matter of taste. Bigger is not necessarily better, but for a rambunctious group, as some that I've been in, I like it about the size of a club.

> *Hey, you! I've got the stick. Shut up.*

Some sticks rattle, others don't. I've come to favor the rattling variety, as the rattling can be used as punctuation.

A talking stick begins with a vision. The vision doesn't have to be complete, but you need something just to get going. So that you can find the wood, the stick or branch that you are going to start from.

> *I like bay laurel that's been burnt.*
> *A magician I know uses* Catha edulis.
> *Manzanita is good. Driftwood is good.*

Every part of this operation is important. You want the stick to come from a good place: good rocks around maybe, a place you like being, a place where you wouldn't mind hanging out. It has to FEEL right. You'll know the right tree when you see it. Take something that won't be missed! Make your negotiations with the tree and cut your branch, feeling it with your hand to make sure it's right.

If you do all of that, your stick already has power. From this point on, everything gets more dangerous. At each step you want to add power, you want to add to the evocative magic. Above all, as all good physicians are taught, do no harm. This requires attention and taste, taste meaning an open sensuous relationship with your partner object. Art is the same. You do the most careful work you can with the techniques at your disposal. Sometimes Art is judged by technique. For magical objects technique is less important than vision and attention. Don't be sloppy, do it well, but if you focus on technique or virtuosity, chances are you'll lose the magic. It'll be perfect, and perfect won't do. It'll be your great creation, but that's not the point. To make magic you have to attempt the impossible, you have to attempt what is beyond your powers, and accept that it will be imperfect. Then it can have power—the power to heal—which is what this is all about.

When I'm sanding I go with the grain, and think that it's like making revisions to a poem or manuscript—it's just sanding—taking away mostly, smoothing the transitions, not adding new ideas. And as you sand the stick it starts to become clear what to add next. I like elementals to be present, stones and metals, and gems and crystals that will catch color and light.

Some add animal, some don't. It's a tricky area: you want to avoid cliches, for one, and you have to be mindful of ritual purity. Commercial products are acceptable, sometimes even good, but any material of doubtful history should be cleaned, that is, "purified." You have to find some way to do that. Some people use tobacco.

As a magical assemblage, a talking stick should have a mandala-like quality—the elements should be in relation, but don't be formulaic. Feel it as you go along. If you are doing it right, you should hardly ever have to think. Each revelation will lead to the next. If something gets out of balance, maybe too much fire energy, or maybe it's too masculine, or there is too much water, or it's too violent, or too docile, you have to sense that, and make a correction. A stick wants to be balanced, even if it's making a statement. Making a statement can be ok, may be ok, but that's more for Art, which, from a magical perspective, is mostly a debilitating disease.

If you look at the talking sticks of peoples who have been doing this for a long time, they have a simplicity and elegance about them. We can appreciate that, but you have to make the stick to fit the situation, and sometimes you need a noisy one.

When you are finished you will know, and those with eyes and deeper senses, the astute and the adepts, will recognize it and be able to feel it. Don't worry if someone else thinks that it is something to put out in a yard sale—that happens to Art lots of times.

AYAHUASCA DREAMS: BANISTERIOPSIS CAAPI

The Dream of the Vine

The Vine of the Soul, the Vine of the Dead, the Spirit Vine.

It is also called yajé, or caapi, or hoasca, or one of over four hundred other words listed by K. Trout (1998). The União do Vegetal call it "tea." The Santo Daime church call it "*daime*."

Dai me força, e dai me amor.

Many varieties are recognized by native practitioners: blue yagé, red yagé, black yagé, white yagé, yellow yagé, and some others, none of which can be distinguished botanically. The *Harakmbet* describe over twenty: "Yellow Bird," which has yellow colors and slows down or speeds up movement; "Unripe," which gives green visions of hunting; "Flesh of Ancestors," which shows the universe of the past and the present; "Flesh of Tapir," the mythical creation stories; "Huangana," which is powerful and must be used with caution or one might not return; "White," which shows the way to the land of the dead; "Exotic Spirit," which enables the shaman's apprentice to enter into the shaman's body so that he can see what the shaman sees.

In Quechua, *huasca* means "vine," and *aya* means "dead" or "spirit." Ayahuasca is thus "the vine of the soul," the "spirit vine," or the "vine of the dead."

Systematic botanists recognize a number of other species and varieties of *Banisteriopsis*, besides *B. caapi*, that are used in ayahuasca brews, but such do not conform to the distinctions mentioned above.

Scores of different plants are used as additives, chacruna (*Psychotria viridis),* being the most common. Other admixture plants include *Ilex guayusa*, floripondio (*Brugmansia* spp.), tobacco (*Nicotiana tabacum* and *N. rustica*), *Brunfelsia* spp., and *Diplopterys cabrerana.*

The vine is the master medicine, and is the doorway to the others.

The secret of ayahuasca is that it is a mixture, it is a compounded medicine: it is a synergy, a made thing, like a poem.

On the upper Orinoco, the Meta, on the Rio Vaupés,
on the great Putumayo, the Rio Tigre, and the Papurí,
on the Coca, on the Ucayali, on the fast-flowing Napo.

The Dream of Taxonomy

B. caapi is in a tropical family called the Malpighiaceae, found mostly in South America. The leaves are opposite, without stipules, and have forked hairs that are characteristic of the family. There are two small glands at the base of each leaf. The stem has a characteristic cross-section, five or six vascular bundles forming a rose pattern that is easily recognized. The seed is a double samara.

Psychotria viridis is in the Rubiaceae, the coffee family. This is an extremely large family, temperate as well as tropical, and *Psychotria* is a large genus. Taxonomy within the genus is challenging, but the plant people in the Amazon know it well and often grow it in their gardens (the *chagras*, the medicine garden). In Quechua it is called *amiruku panga*. It is a large woody shrub with shiny green opposite leaves and sessile red berries in a terminal panicle, a description that matches thirty or forty other shrubs that you would see on a short walk through the jungles of upper Amazonia.

Banisteriopsis is a liana, a climbing vine. Growing up from the ground, the vines twist and spiral around whatever they can reach for support: branches, tree trunks, around themselves if there is nothing else. They grab other lianas, drop, loop, clasp around hanging roots of epiphytes and *Ficus* trees, climbing and spreading over the canopy, and generally making a tropical forest one heck of an interesting-looking place.

There are usually long lines of ants moving up and down them, carrying little triangular pieces of leaves in their mandibles like sails.

> *On the Rio Purús, the Urubamba, the Turuacá,*
> *on the Marañón, the Javari, the Juruá,*
> *on Rio Pastaza, on Rio Negro, and the Rio Yurí,*

Ayahuasca brews are many. Different families and different peoples have their own recipes. Generally, a meter or two of vine is cut: "double an arms length." The vine is cut up into pieces six or eight inches long. The pieces are either sliced longitudinally or mashed up with a stone. The outer bark is usually rasped. The pieces are placed in layers in a pot, alternating with layers of the *Psychotria viridis* leaves. About 30 to 40 leaves are needed for a one-person pot. But nobody ever prepares a one-person pot of ayahuasca.

The best pots are clay pots, properly chanted over while thrown and fired, then carefully watched over and painted with ayahuasca pictures. One does not want any evil powers in one's ayahuasca pot. Such pots are items of inheritance, being passed from shaman to apprentice, usually within a family. Iron pots are next best. Aluminum pots are better than nothing. A number ten dutch oven is a handy size for a small group. The churches use big cauldrons.

After some hours of cooking, during which water is added to the pot to replenish that lost to evaporation, the liquid is poured off and saved. More water is added and the mass is again boiled. The two extracts are combined and carefully reduced until the liquid is concentrated enough so that a quarter to half a cup is a dose.

Often drunk in a circle. Oftentimes seconds are served after an hour or two.

Ginger root is passed and chewed to cleanse the palate and to reduce nausea. Traditionally, cigarettes are passed. The ayahuasca spirits like tobacco, but they don't approve of solitary smoking. However, tobacco is prohibited in many new age circles, as it is by the Daime and the UDV.

The ceremony is almost always performed at night.

* * *

The *Dream* *of* Rio *Napo*

I was in a small house with a thatched roof built up on poles. The walls are only half-walls, about a meter high, the rest is open to the forest. The air is warm and very humid. The platform is divided into several rooms interiorly. One of the rooms has a card-table set up. On it two stapled workbooks from the elementary school are open, lying beside a stubby pencil. Two burlap sacks rest in the corner, each about half-full of rice and maize.

The main room has a counter on one side, which is the kitchen, and a fire pit near the other side. A couple of fish-traps made of vines hang from the rafters, along with a shotgun. A few aluminum cooking pots are stacked along the kitchen wall.

Other than some clothing in baskets, there are no other material possessions.

Manaus, the "middle of the Amazon," is over a thousand miles to the east. The Putumayo is a hundred or so miles to the north, Iquitos 350 miles to the south and east, the Vaupés four hundred miles to the northeast. Not too far to the west, the Andes rise up abruptly. The Napo here looks like it's a mile across, and it's still three thousand miles from the sea.

The heat and the humidity could be called "oppressive," my shirt is clammy and sticking. There are so many insects that it is almost a constant drone. Some of the calls must be from birds in the canopy. Or whatever else is out there.

Large fireflies flash so brightly I had thought they were men walking with flashlights along the edge of the forest.

What could go wrong?

Don Jaime's wife was tending the pot of ayahuasca which was simmering on the firepit.

The *Dream* *of* Roberto

> *The patients and I went forward to drink one by one. 'Salud con todos'—health with all—we salute before drinking, the rest of the patients echoing back as a choir. Raising a cup of ayahuasca to the lips is a practice of transubstantiation. Within the thick, bitter fluid, capable of provoking instant vomiting, is the taste of the salvific power of the jungle, of evolution itself. That night I drank as if I were thirsty, the liquid flowing down my throat like honey. I regarded the cup in wonder.*
>
> *—Robert Tindall, Yana Puma Travels*

The Dream of the Anthropologist

While drinking the potion the men grimaced and screwed up their eyes as if the draught were very bitter and nauseating. They coughed and spit; some of them shook their heads as if in disgust.

—G. Reichel-Dolmatoff, The Shaman and the Jaguar

The Tucano people who live near the Vaupés River in Colombia use yagé both shamanically and socially. This distinction was made by anthropologist Reichel-Dolmatoff, not by the Tucano themselves, but has some relevance to our interests. Shamans drink yagé when consulted by an individual or a family for a particular concern, perhaps an illness, a streak of bad luck, or perhaps for murder, for vengeance on an enemy. The distinctive characterization of shamanic use of yagé is that the shaman has been hired for a very specific reason, for a very practical reason, and the role of the shaman is more like that of a physicist or a philosopher than a priest, a philosopher whose books are yagé visions, or a physicist whose equations and formulae are the entities and energies of the spirit world.

The payés [shamans] we have known always gave us the impression of being sober, level-headed people, quite normal members of their society.

What distinguishes a payé from others is that he is an intellectual. As such, he is not much given to small talk and the simple pleasures of the home. He often has a tendency to keep apart from others, to be silent, and abstain from noisy conversation and ribald joking. But he is immensely curious; he is always interested in animals and plants, the weather, the stars, diseases—anything that, to others, is unpredictable. He is interested in the 'pagan' antiquities of his own cultural tradition: in myths of origin, in archaeological sites, in long-forgotten place names, and in stories of legendary migrations.

—Reichel-Dolmatoff

On other occasions all the men of the village will drink yagé in a social context. At these events the men and women will dance together, sing together, consult with each other, discussing the meaning of various images and patterns. And many of the patterns they recognize and know. They all recognize the parallel wavy lines of the Milky Way. They can all recognize the symbols of the jaguar.

When they sat down to rest there was jesting and laughing. "Ho-ho-ho!" the men called, and the women answered in a shrill falsetto. There was a short exchange of obscene remarks.

The Tucano say they have actually seen jaguars chewing on the stems of *Banisteriopsis caapi*, gnawing on the vines where they grow in the jungle and then having convulsive purgations.

Sometimes the vine is used for hunting.

> *In the rainforests of the Putumayo, those who wish to hunt drink yagé in order to turn into jaguars. Once they have become jaguars they are able to run down deer and tapirs with ease.*

In other tribes both the men and the women drink yagé, and yagé visions are a rich source of the artistic motifs used in painting and weaving. Some peoples drink yagé and hang out in their hammocks.

The Dream of Rio Napo

Michael Harner called it "the sound of rushing water." It marks the onset. Don Jaime was shaking his leaf rattle, *sutu panga* leaves tied together around a short stick, when the sound became three-dimensional in a new way, and it was like being under a waterfall. Streamers of sound fell around me and splashed off my shoulders. This was magic.

The Dream of the Anthropologist

> *At the beginning of the 20th century, mestizos apprenticed themselves with increasing regularity to Indian shamans during the social upheavals of the rubber boom, often after a life-threatening illness from which they had been cured. They in turn had trainees, which resulted in the spread of vegetalismo, a widespread syncretic mix of herbalism and shamanism in Amazonia. . . .*
>
> *—Françoise Barbira Freedman*

Though surrounded by the wealth, the written history, and the trained armies of the colonialists, the mestizos, like all disenfranchised people, had no access to that power. But they did have access to the other half of their heritage—the Indians—who, if not power, had the magic and the occult knowledge stereotypically associated with the Wild Man.

Peter Gow (1996) believes that a reverse process also has been occurring, that the "power" evident in urban centers such as Iquitos led to the adoption of mestizo shamanic forms by the Indians.

He notes that some of the tribes furthest from "contact"—the least acculturated—don't use ayahuasca at all. And among those who do it is not at all like the pan-Amazonian "ayahuasca circle" of commerce (see also Taussig, 1987).

Power over money is notably absent from ayahuasca shamanism. Taussig notes that magic can be co-opted by the ruling elites—literally, bought. Political or environmental organizing is another matter, and is dealt with more coercively.

The influence of Western ideas is also evident in the concept of "shaman," as in "so-and-so is a shaman." Instead of, say, "Carlito, you found the tapir's tracks, why don't you serve the yagé tonight."

JAGUAR MASK, MEXICO

The Dream of Rio Napo

I closed my eyes and blackness flowed over my field of vision, a deeply black blackness that extended into a three-dimensional space. Then a butterfly appeared.

Well hello there. . . .

Its wingspan seemed to be about four-feet across. The butterfly was mostly dark also, except that its body was glowing like a neon sign, orange and yellow, with all the veins in its wings glowing, purple. It was a creature of astonishing beauty.

Where did that come from?

Probably from Don Jaime's little bag of songs, his soft whistling and the simple sincerity of his short verses. These were his friends. He was calling them. Which is why such men are sought out. Anybody can cook up a brew.

The point of the songs, the *icaros*, is not to be "good," in the sense of being in tune, or finished, or sophisticated—nor that the poetry be complex or accomplished—the whole point is whether or not the beautiful spirits find them attractive.

Many may come, not all invited and not all beautiful.

Which is why there is spitting, and tobacco.

The Dream *of the Young Woman*

The first thing I learned was that ayahuasca is not a plant at all. It is a large snake, a boa, that lives under the water. One of the grandfathers understood my visions:

> *It is ok that they are not sacred visions, in the way of our people. In the old times there was another ayahuasca, which we call ninahuasca, the Vine of Light. This huasca is now lost. In those days we would drink ayahuasca to kill our enemies. We would drink the huasca and then we could find them and spear them. There was a lot of killing and they drank the ninahuasca to purify themselves. I think this is the huasca-song that you are dreaming. It is also ok. For us it is important that we drink together and that we stay together as a people, and that is why we have the hymns.*

* * *

The Dream *of* Rio Napo

> *If you want to be a Yagé drinker and a 'graduate,' in other words, a wise person, the first thing you need is interest, also bravery and an ability to withstand suffering.*
>
> —*Fernando Payaguaje*

Nausea and retching are common, but not this time. This is a light dose. Don Jaime is whistling and calling his spirits. Tentative whistling and from the whistling a song begins. Hoarse voice. His assistant always ready with a newly lit cigarette to replace the one Don Jaime is smoking as soon as he has finished it.

> *There were many iridescent women there—iridescent girls grinding corn with the peccary women, making chichu.*

Don Jaime was being forced off of the land where his father and his grandfather had lived by a lawyer from Quito who told him that he had no "papers."

The Canelos Quichua can live on a single piece of land for generations—clearing an acre of forest, farming it for half a dozen years, and then letting it return to secondary forest and clearing another patch. Eventually, in a generation or so, they are able to return to the first plot and repeat the cycle. There is always one patch that is never cleared, that is left as primary forest, as a home for *Sacha Runa* and as a source of medicinal plants. The contrast to the land of the settlers is striking—where a mangy cow or two have denuded whole fields that are gradually claimed by pampas grass and other spiny and inedible herbage. The fate of the tropical forests and the fate of their indigenous inhabitants are inextricably wedded.

The settlers follow the roads, the roads are punched through for oil, or for timbering.

The Dream of Community

> *[What is left is] a deep dive down to the roots of being to repossess the ancient forms of community and solidarity in the hope that the seeds of the new spiritual and ecological life can germinate and bear fruits on this earth.*
>
> *—Alex Polari de Alverga, Forest of Visions.*

Several churches exist in Brazil that use ayahuasca as their sacrament, the best known being the União do Vegetal, often called the UDV, and the Santo Daime. The UDV has one hundred temples and about 7000 members, from all walks of life. They grow their own ayahuasca plants, hold group services, and are growing and expanding into other countries.

> *The UDV say that there are two castles, the Castle of Truth and the Castle of Curiosity. The Castle of Curiosity is larger, with endless rooms and corridors.*

Members of the *União do Vegetal* call the vine the "force," and the *chacruna* leaves the "light." They seek a balance. More and more light is not necessarily better: "too much light overexposes the film."

Both churches are Christian, but the Santo Daime is more overtly Christian in its service and liturgy. Santo Daime tends to be more rural than the urban-based UDV, and members sometimes live in extended communities. "*Daime*" is derived from invocational phrases such as "Dai me amor, dai me luz, dai me força" (give me love, give me light, give me strength), and "*daime*" is the church's name for ayahuasca. At Santo Daime services the members all wear white, and dance together during the peak of the experience.

Santo Daime was founded in the 1930s by *Mestre Irineu*, Raimundo Irineu Serra, a rubber-tapper of African Brazilian descent. Daime is a revealed religion, the doctrine is based on the hymns received from the *daime* by the members of the congregation.

Alex Polari stated the conundrum of the church this way: "We will accept the risks of institutionalization to preserve the spiritual focus on community rather than on the solitary explorer."

Dai-me força e dai-me luz

A third church, Barquinha, was founded in the 1950s by Master Daniel. Master Daniel was the chief disciple of Irineu Serra when he received new revelations from the Queen of the Forest. While structurally similar to Santo Daime, Barquinha incorporates many elements of the Afro-Brazilian Umbanda tradition, such as direct spirit possession, and the Barquinha altar would be familiar to followers of Umbanda or Candomblé.

There are mermaids.

A Barquinha service may begin with a Catholic-style invocation, with singing of religious hymns and the raising of the Cross. After that the members move outside, where there is an altar on the ground surrounded by little figures of gods and spirits. Drums are brought out and dancing begins. Those needing healings move in to the center, along with the most experienced healers. Supported by the ring of dancers, the gods and spirits enter, and those so possessed assume the postures and mannerisms characteristic of the particular spirit they have contacted. They may be consulted.

The Dream *of the* Young Woman

The boa loosened her coils and after awhile I could breathe again, like ordinary people. She coughed up some phlegm and told me to swallow it. Even this I did. But it was only when her teeth were on my neck that I could sing.

* * *

The Dream *of the* Boot

There was a little wooden bridge, a log and plank bridge like you would put over a small ravine. But the moss, when I looked at it closely, was a whole forest—canopy trees, under-story trees, and shrubs and herbs on the forest floor. I could see climbers and lianas, all of it, and epiphytes. Then a chain-mail boot with a large steel spur walked across the bridge. Everywhere it stepped the forest was crushed and obliterated.

Give me words.

Jack-boot. Goose-stepping boot. .30 caliber boots.
That big steel boot pounding away on the drilling rig.

The Dream *of* Magic

> *The pans are filled, alternating layers of vine and leaf. Vine, leaf, water, and fire are the physical agents in this sacred vehicle, the daime. To it we give our best energy and vibrations. We work hard. The fruit of our effort impregnates the liquid in the same way that we are impregnated by the vibrations of the spiritual Being that inhabits the vine and the leaves of the forest.*
>
> *—Alex Polari de Alverga*

The vines are pounded with heavy wooden mallets in a process called *bateção*. Twelve men pound simultaneously, in unison, to the tempo given by the hymns of the lead singer. The process can take hours. Only those who have reached a certain level of attainment, those who have been able to recognize their own negativities, are permitted this work. In a special ceremony, all the negativity is placed on top of the stump and macerated.

Philistine unbelievers will of course scoff that the mental state of the preparers could have any effect on the medicine, believing everything to be a matter of "inert molecules." However, even trained western researchers early on recognized the importance of "setting," not to mention the practices of untold thousands of traditional plant-workers. This is, again, the "MEAD" principle: Magic is Empowerment by Attention to Detail. Many religious rituals around the world prove, indeed, that the magic of the preparation is so powerful that such ceremonies can be effective with no molecules involved whatsoever.

I believe it is quite fruitless to try to pin down the MEAD effect by double-blind experiment. The experiment itself would be an invocation of a quite different god, who would surely manifest his limited presence.

The Dream of the Grieving Mother

I saw both of them clearly. They were radiant. They were smiling. They told me that I didn't have to worry about them, that everything was all right where they were.

SHIPOBO TEXTILE OF AYAHUASCA VISIONS

The Dream of the Butterfly

There are four different kinds of ayahuasca vine, but they are not what you would call species. There is the red vine, the blue vine, the white vine, and the black vine. The difference between them is in the visions they produce. The blue vine produces the most colorful visions, mostly in a bluish color. That is where the giant butterflies live. The red vine produces the red visions where there is blood and killing. There is not so much color in the white vine. The light in the black vine is not so strong, but it is easy to see. It is very black there and it is a good place to speak to the spirits of the dead. The white vine is not so full of visions and has to do with the Great Sickness. Not all shamans are interested in this vine, but they should be. I do not agree with those who think that studying this vine is foolish.

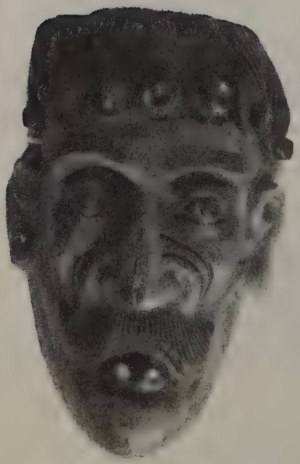
Of course we can tell them apart! The vine is the Queen of Medicines. It is the vine that produces the forms. We add the leaves to give them light.

The Dream of the Young Woman

My grandfather collected orchids here. He turned into a different kind of snake, a snake with poison. He gave the names of the organizers at the mines to the death squads. I think he smuggled guns for the CIA. In Guatemala, they murdered a whole village. Maybe that is some of the reason that I came back here.

The Dream of the Philosopher

If one travels very far on the path of ayahuasca, certain profound questions may emerge, such as whether the entities and knowledge offered by the experience are "outside," coming from the intelligence of the forest itself, or "inside," coming from one's own psyche. Both positions have their adherents, backed up by reasonable arguments, though those of the "inner" persuasion often have to posit telepathy or other extra-scientific mechanisms, such as "DNA resonance," to complete their explanations. A related question might be whether the ayahuasca realm is "real," which is how it is usually perceived at its deeper levels, and whether that reality is more real than "reality."



Benny Shannon, a cognitive scientist with extensive ayahuasca experience, astutely connects these two questions by noting that "if realism is adopted, then in principle, it is possible that the information entertained under the intoxication is independent of the Ayahuasca drinker and is not created or invented by them."

Shannon's book, *The Antipodes of the Mind* offers the most complete systematization of the phenomenology of the ayahuasca experience to date, and, he manages to steer a critical course between both the animist and the biological reductionist camps.

The lawful patterns of cognition, I believe, are defined in terms of experience which is laden with meaning, not neurophysiological processes or brain events. The situation is analogous to that encountered in music. Admittedly, without a piano, piano music cannot come into existence. However, if one is to understand whatever is pertinent

> *to the understanding of a piano sonata, it is senseless to study only the physics of the piano chords and their acoustics.*
>
> —*Benny Shannon, The Antipodes of the Mind*

Central to Shannon's thought is the idea of *metaphoricity*, and Shannon cites an increase in metaphoricity as one of the salient features of ayahuasca inebriation. Backing up his claim with empirical data, Shannon dismisses the limited definition of metaphor (as being a secondary description based on some more primary and "literal" description), and posits metaphor as a primary and non-derivative process. In this he is not far from the concluding dictum of Norman O. Brown's *Love's Body* that "there is only poetry."

Shannon lists several examples of metaphoricity common in ayahuasca experience: *seeing as*, *parables*, *second reading*, and *synaesthesia*. "Seeing as" is partly based on the idea that perception is non-naïve—that is, that vision is not photography, it is interpretive. An example would be seeing a face in a leaf, or maybe, seeing the entropic history of life in the weathering patterns of a rock. "Parables" are stories of personal and general meaning gleaned from an image or event. "Second reading" is the finding of hidden meanings in verbal utterances, such as experiencing the profundity of the seemingly simple Daime hymns. "Synaesthesia" is the experience of one form of sensory input by a different sense, such as seeing music or tasting colors.

While it is easy to glimpse the metaphorical nature of the myths of other cultures, the myths of one's own culture are more fugitive. Thus while "outer" (coming from the spirits) is easily enough understood as a metaphor, "inner" (coming from the psyche) is usually accepted as being literal. Buddhist philosophers have some teaching on this point. Biological reductionism, the belief that all of conscious experience can be explained, in principle, by the interplay of neurons and chemicals, is like someone who, discovering the lever mechanisms in a typewriter, declares "now we know how books are written." While I think that reductionism is an excellent and recommended discipline for youth, a touch of mysticism, backed up by a sustained and methodical discipline of introspection and validation, is more seemly for the mature.

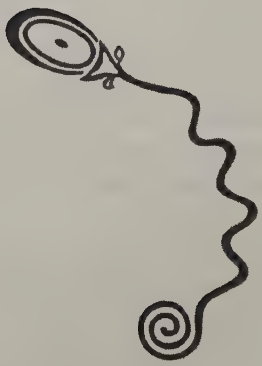
(Incidentally, simply because none of the alternatives to materialism are viable in no way supports the validity of materialism. A basic theorem of poetic logic is:

$$\neg(\neg \mathrm{A}) \nRightarrow \mathrm{A} \qquad (1)$$

That is, "not not-A does not imply A." As long as you don't mind living without gravity, this little drop of poison has the virtue of levity and can be very liberating. It solves all sorts of philosophical conundrums, and, if you think about it the right way, is much more likely to be true, in this, the world of tears, than silly extrapolations of the Boolean $(a')' = a$.

Mystical and spiritual traditions insist that the truth of proposition (1) must be *experienced*—that the proposition is far subtler than it might at first appear, and needs to be revisited regularly for it to be incorporated into one's being. That is why we mention, again and again, the importance of ground state training—the patient investigation of one's own self-nature—as a sort of baseline bioassay. Where "baseline," of course, may be an empty signifier.)

> *What I would like to propose is that the Ayahuasca inebriation is a time of grace during which ordinary human beings can, with some constraints that I shall spell out in a moment, be like dancers or musicians when the Muses descend upon them.*
>
> *—Shannon*



SERPENT MOUND, OHIO, CA. 1000–1500 CE

Shannon describes how once, during a private ayahuasca session, he sat down at a piano and played the score of a Bach prelude several times, until he felt himself entranced. He then left the score and began improvising, something he hadn't done before, and played for more than an hour in a way that was entirely new to him. Since that time he has been able to free-play without ayahuasca. Poets know that while they do write poems, they are rarely as good as those that are "received." The question as to whether the wonders and powers of an ayahuasca world are invented or discovered is analogous to the same question applied to mathematics.

> *As a rule, Ayahuasca drinkers' creativity is at its best in two situations: when they surf the special energy that the brew induces and channel it in active performance* and *when they let go and totally immerse themselves in this energy and the effects it generates so that the visionary is experienced as real. Thus, here too, we must relinquish distinctions that are so much a part of us—that between creation and reception, between self and non-self, between hallucination and reality.*
>
> *—Shannon*

The Dream of Rio Napo

The boa swam towards me and swallowed me. Inside was like a cave, where the ribs of the boa were sparkling stalactites. I never once thought of Jonah.

* * *

The Dream of the Anthropologist

The visions pass in waves, spells of ordinary lucidity alternating with intense visionary immersion. And, as Michael Taussig points out, punctuated by moments of gleeful laughter. Shannon cites the alternation as a distinctive characteristic of ayahuasca, different from the other plants and drugs of the phantastica. Taussig points out that it is the in-between parts, the "not part of the ritual" parts, the crazy montage of spiritual insight and ridiculous humor, that is the true signature of the ceremony.

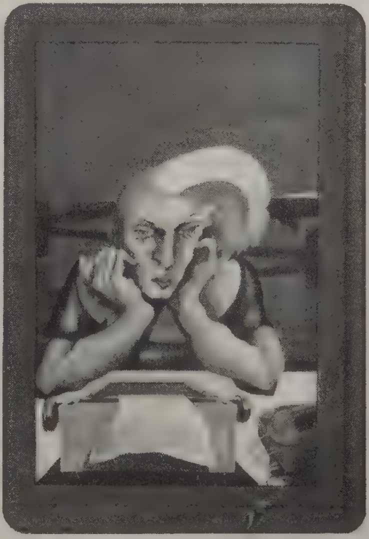
> *By and large anthropology has bound the concept of ritual hand and foot to the imagery of order, to such an extent that order is identified with the sacred itself, thereby casting disorder into the pit of evil. . . . Yagé nights challenge this ritual of explanation of ritual. They make us wonder at the unstated rites of academic text-making, at the means for creating intellectual authority, and, above all, at the convention of sense-making thereby inscribed through conventions of 'ordering' the chaos of that which has to be explained.*
>
> *—Michael Taussig*

(Thank you.)

The Dream *of* Purging

There's too much pain and hurting in the world,
And too much blockage in me.

I saw the origin of the universe go into the vomit basin, in colors that I'd never before seen. Enough! Begone! Ten thousand sufferings. The ills of the world and my own ills. All the ignorance and greed and fear, all the self-centered protections that hurt everyone and make it all worse. The pains of illness and the hundred pains of self-doubt and anxiety. The strident pains and the unnecessary pains. The pain of conceit and the poisons of grasping and hoarding. The silly pains and the pains of terror and the pains of death. All the pent-up and howling pains and the prideful pain that blocks us from grace.



NINE OF SWORDS, KARMA TAROT, B. B. ERFURT

The Dream *of the* Butterfly

I sang and it didn't come.
I kept singing.
I called it and it didn't come.
I kept singing. I called. I whistled.
I sang and it didn't come.
I kept singing.
I sang and

Oh!

* * *

The Dream *of* Rio Napo

Yes, we'll gather at the river.

The Santo Daime church have a service called the *Mesa Branca*, the "White Table," where all spirits and gods are welcome.

"Not till the sun excludes you do I exclude you."

In Zen Buddhism, every meal is preceded by an offering to the *pretas*, the hungry ghosts. The hungry ghosts have huge stomachs but necks no wider than a strand of thread, so they are always unsatisfied.

Some plant doctors leave little offerings for "orphaned spirits," unnamed spirits who may be lost and wandering in confusion.

The beautiful, the beautiful, river.

The Great River where none are turned away, where no god is denied.

Gather with the saints at the river,

That may be the one Great Medicine for bigotry and hatred. For if there be a God, surely it is that One, who allows ALL other gods before him. The True God (blessed be His Name) is peerless. He contains all gods, all spirits, all names. Idolatry is taking the letter for the spirit—not acts of worship using figures as symbols. "I am a jealous God" means that jealousy is not excluded, that such passions are a part of the universal fabric of being. But how can you say "God is great" and think that He could have limitations?

Ok, that's Jews and Muslims, what about the Christians?

So many of them are hypocrites. So many have been fooled by the Deceiver, who loves words like "righteous" and "unrighteous," the saved and the sinners, who loves to divide and to wear fine brocade.

The True Throne is so true that there is nothing to defend, nothing to protect. If the untouchable or the heretic or the devil cannot bathe, it can't be the True River.

That flows by the throne of God

* * *

The Dream of the Poet

On the clear Madiera, on Rio Beni, and the Rio Japurá,
on Rio Abuna, on the Madre de Dios, and the Rio Mamoré,
on the Rio Caguan, the broad Rio Branco, and the Rio Caquetá.

JUREMA: MIMOSA HOSTILIS

Mimosa hostilis (Martius) Bentham [=*Mimosa tenuiflora* (Wildenow) Poiret].

Other synonyms are *Acacia hostilis* Martius, *Mimosa nigra* J. Huber, *Mimosa jurema* A. Cámara, *Mimosa apodocarpa* var. *hostilis* (Martius) Hassler, *Mimosa cabrera* Karsten, *Mimosa limana* Rizzini, and *Mimosa maracasensis* Harms.

Common Names Jurema. Jurema prêta. Tepescohuite. Cabrera. Carbonal.

Related Species *Mimosa ophthalmocentra* Mart. ex Benth. is reported to contain DMT (N-N-dimethyltryptamine) and to be used in jurema brew (Batista et al., 1999). Many other *Mimosa* spp. are used in jurema brews, and may contain psychoactive alkaloids, such as *Mimosa verrucosa* Benth. and *Mimosa artemisiana* Heringer and Paula. *Pithecolobium diversifolium* Benth., another member of the Mimosoideae, is a reported base for "black jurema" on the São Francisco River.

Various *Acacia* spp. are another source of psychoactive tryptamines. *Anadenanthera* spp. contain bufotenine and DMT. *Desmanthus illinoensis* root bark contains extractable quantities of DMT, confirmed by the author. Several *Desmodium* spp. contain DMT (see Trout, 1998). These plants are all legumes, in the Fabaceae, with pea pods and everything. Many other plant families contain DMT and related tryptamines, especially grasses.

Part Used The root bark, pulverized. Some herbal preparations of *tepescohuite*, a topical ointment for burns and wounds, also use the leaves.

Effects The jurema/harmel combination retains all of the beneficial properties of harmel alone, while adding a strongly visionary and cathartic element. In the morning the visionary effects are gone, but the deeper effects of the medicine are longer-lasting: a powerful anti-depressive quality—the "cleans out the cobwebs" gift of catharsis—a clarity of thought and purpose, a freshness and a general feeling of good will towards oneself and towards others. Several have noticed a pleasant enhancement of male virility, which may be some of the reason that sexual restrictions are often included in the "diets" associated with brews having such aphrodisiacal properties.

How Used *Mimosa hostilis* (generally referred to as *Mimosa tenuiflora* in Mexico, or *tepescohuite*) is widely used for fence posts and for firewood, and as a wash or a salve for wounds and burns. The plant is a small thorny tree and is aggressive and tolerant enough to be considered invasive, forming thickets along roadways and in old pastures, and is aggressive enough to be considered invasive. In Mexico it is found in Oaxaca and Chiapas, and its range extends southward through Central America to Colombia, Venezuela, and Brazil (where it is usually referred to as *Jurema prêta*). Its efficacy as a treatment for wounds and burns, though widely accepted as a folk medicine, is still being investigated by scientists, with mixed results. R. Anton and associates, who isolated three new triterpenoid saponins from the plant, state that their in vitro experiments "contribute to explain the traditional use of this plant material" (Anton et al., 1993). C. Palacios and associates compared the sterile powder of tepescohuite bark to two controls in an experiment with rabbits and found no significant difference. This group concluded "Due to the potentially hepatotoxic effects and low therapeutic efficacy of tepescohuite it should not be used in human beings," but supply no supportive evidence for their caution (Palacios et al., 1991).

The Plant While the range of jurema extends from southern Mexico to northeastern Brazil, its use as a ritual beverage is only known from the dry *caatinga* of Brazil. Caatinga is the vegetation zone covering most of northeastern Brazil, inland from the coastal forest (sometimes called the "humid caatinga"). Dry caatinga covers the western two-thirds of the states of Pernambuco, Paraiba, Rio Grande do Norte, almost all of Ceara, southern Piaui, the western parts of Alagoas and Sergipe, and most of central Bahia, roughly 700,000 square kilometers, an area larger than the state of Texas. The caatinga area is semi-arid, characterized by poor and shallow soil, scrubby and thorny plants, interspersed with many small islands of moist forest. *Mimosa* spp., *Zizyphus joaseiro*, members of the Euphorbiaceae and the Bombacaceae are characteristic vegetation.

The indigenous peoples of this area have all been heavily impacted, in some cases exterminated, by European presence, and the jurema rituals now in use by a number of Indian groups are all "resurrected." Initially, Indians from coastal areas were pushed inland, displacing the people already living there. Sugar cane, slavery, mining, and logging continued to move inland, creating intense competition for the few areas of "good" land, the wooded and fertile *brejos* islands. Nineteenth and early twentieth century government policies, in most cases, aided in this displacement of Indians from their land. More recent government programs, aimed at securing land titles for tribal Indians, were an impetus for the revival of ancient tribal customs, such as the "Dance of the Toré" and the jurema ceremony, as the government viewed the possession of these cultural traits a necessary qualification for recognition as a bona fide tribe.

In 1946, a microbiologist named Oswaldo Gonçalves de Lima published an account of a brew called *vihno da jurema*, or *ajucá*, being ritually used by the Pankararu Indians in southern Pernambuco. The drink was prepared by squeezing the pounded root bark in water, and there was no mention of any additives. The use of jurema was thought by Schultes and Hofmann to be extinct, but enough knowledge survived for the gradual re-invention of the ceremony by other groups in the Sertão, the caatinga outback. Many coboclos (mixed blood Indians generally without any tribal affiliations—"civilized" Indians), whose families included not only descendants of various Indian tribes but also of runaway African slaves, sought to reestablish their tribal identities in order to hang on to their land. Tribes that had established the Toré, such as the Tuxá, shared the ritual with other groups such as the Kiriri, the Kantaruré and the Atikum. The Kariri-Shocó were able to defend 200 acres of forest as their spiritual tribal home, and perform their jurema ceremonies there.

> *Traditionally, the Kariri-Shoko perceive plants as living symbols of their ancestors, literally the roots and trunks in the 'tree of life,' their original beings. They interpret the natural habitat as a book, where their history can be seen and saved, and the forest as a place where it has been imprinted.*
>
> *—Da Mota, 2001*

For the Kariri-Shocó, plants are medicines, mediators, ancestors, and deities. Jurema has helped the Kariri-Shocó to survive and resist total assimilation by "the assailment of cattle farming and extensive monopolistic agricultural production that today characterizes the rest of the area" (Da Mota).

The Ouricuri ceremony of the Kariri-Shocó takes place in the *mata do encanto*, the "enchanted forest." In the old times the ceremony was called *Warakidza*, an ancestral Kariri deity who was identified with the Ouricuri palm tree (*Cocos coronata* M.). Under pressure from the Jesuits, probably in the late seventeenth century, the Kariri changed the name of the ceremony from the god to his tree. This was an insignificant difference to the Kariri, but very important to the Christians. *Warakidza* means "companion." Tobacco is very important in the Kariri Jurema ceremony. The Kariri-Shocó have three plants in their Jurema complex: *Mimosa hostilis, Mimosa verrucosa*, and *Vitex agnus-castus* Linn., "chasteberry," in the Verbenaceae, which is used in folk medicine for "female disorders."

As best as I can untangle several webs of the story, the Kiriri added the Toré dance to their tribal repertoire in 1974, when a large number of them visited the Tuxá for just that purpose (along with a soccer game). The Kiriri added their own "enchanted beings," and modified the rhythms and the costumes. The Kiriri Toré is held on Saturday night in a large dance space. Jurema is served, and men, women, and children dance together in long lines. When the spirits arrive, the focus on the dance floor shifts to the possessed dancers. There is a private closed-off space where those embodying a spirit may be interviewed. The Toré conflicted with some of the existing Kiriri shamanic practices, which were gradually marginalized. There is a marked presence of Afro-Brazilian elements throughout the Toré complex (Brasileiro, Da Mota).

The Tuxá may have adopted the Ouricuri ceremony from the Fulni-ô, the only tribe in the northeast to have retained their language. Many of the terms used in the Kariri Ouricuri are Ia-tê, the language of the Fulni-ô. In the Fulni-ô ceremony, music, alcohol and sexual intercourse are prohibited in the ceremonial area. Members of the tribe who live out of the area take leave of their jobs to be able to attend the annual ceremony for at least the first week of the two month event. Those who are able stay in the special village built in the forest for the entire ritual (Díaz, 1998).

Batista and Almeida reported that *Mimosa ophthalmocentra* was also used for preparing jurema.

Signatures Ayahuasca is polytheism and animism, pythons and butterflies. Jurema is a caravan in the desert, visited by God and His Angels; or drums from Africa and the joys of an oasis. Ayahuasca visions are night visions, the background seems like the black night sky. Jurema visions have less contrast, as if the blazing sun of the caatinga were able to seep through and lighten the backdrop..

How Used Jurema is best used in a circle.

> *Here, everyone gets a vomit bowl.*

The Ally By now the visioning was powerful and flowing, the differences between what was vision and what wasn't disappeared, the internal and the external inextricably fused into a single mysterious and all-encompassing continuum.

The Doctor was in a corner sitting like a fat Buddha, like Ho Ti, with a blanket wrapped around him and over his head like a monk's robe. He was swaying and talking, channeling the Jurema Goddess, a constant flow of words and messages for each of us.

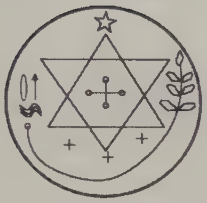
> *Listen, she says to you, she's talking about this, and the tobacco is talking about it also, she wants you to go ahead and finish it, that it's an important piece for you, the way everything is connected, I mean it's not just that it has to do with. . .*

And on and on non-stop with messages for everybody.

The Plant There are two jurema preparations, *jurema negra*, "black jurema," and *jurema branca*, "white jurema." It would be nice if *jurema negra* referred to prepartions of *Mimosa hostilis*, and *jurema branca* referred to preparations of *Mimosa verrucosa* or *Pithecellobium diversifolia* or something else, or that *jurema negra* has visionary properties while *jurema branca* does not. But, while this may have been once the case, according to Yatra (1998), these terms are currently more confused.

Some of the northeastern tribes, such as the Pankaru and the Tumbalalá have two forms of the Toré ceremony, one public, where members of neighboring tribes may attend, and one private, for tribal members only. The Pankaru call the public ceremony "Toré of Dance," and the private ceremony the "Toré of Science," or the "Toré of the Enchanted." The Pankaru do not consume jurema at the Toré of Dance, nor is trance possession a part of the ceremony—it's a social event. The private ceremony, by contrast, is primarily focused on healing, tribal bonding, spirit possession, and the divination of messages from the spirits and the ancestors.

The Tumbalalá divide the spirits into two groups—there are the wilderness spirits that live in the caatinga, wild and uncivilized, sometimes mythic ancestors of the Indians; and there are the water spirits, that live in palaces and speak Portuguese. The wild spirits are more powerful but you can't talk to them, so you have to use the water spirits as intermediaries.



FIRMA DE CONGO VELHO

Central to the Jurema ceremony is the concept of *encantado*, "enchanted." The spirits are enchanted, so one must enter into enchantment oneself to be able to speak to them. The planes of the enchanted world and this world are separate but they intersect, and it is through these interstices that contact is made.

> *Contact is made through songs—short songs with simple verses and lots of repetition—songs that are open and change, that react to events and incorporate them. Songs of enchantment.*

Jurema has also been adopted by Umbanda groups, though for these highly entheogenic people (if I may use the word in its root sense), simply placing the jurema on the altar is enough to invoke its powers (*kiéri* is approached in this circumspect manner by the Huichol).

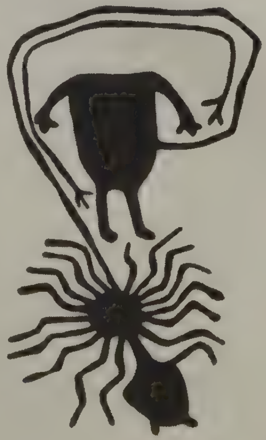
The Ally The Bhikshu had come up behind me. He kind of tapped me or maybe he didn't. I didn't jump, on the outside. Part of it was the dim light. It was like there was a vapor in the air that was faintly luminescent. The Bhikshu had completely covered his face with black and white paint, about half and half in a bizarre zig-zag design, and if he didn't look like Death himself he looked like someone who could lead you there. I think I just stared into his eyes with my jaw open. Now I know what is really meant by "having fire in the eyes." He had a grin that could have scared the shit out of the Devil.

> *"Hey," he spoke gently, "do you think it's time for a round?"*

◆

Signatures Jurema flowers are used to ward off the evil eye.

Effects Pharmacological metaphors, quite apart from their inherent problems of hypostatization, are imprecise when it comes to describing a helper-plant such as jurema. The jurema-harmel brew contains harmine, harmaline, and DMT, just like ayahuasca, and yet no one who has experience with both brews would confuse them. Yagé is a jungle plant—it's wet, it's rich and crowded, plants and critters move in from every direction. Jurema-harmel is dry—there is a lot of movement but there is a horizon, a sense of distance and expanse, distinct from the close-quarters of ayahuasca.



TIME FOR A ROUND? MENOMINI PETROGLYPH

History, "Finding Jurema"

"Jurema" is from Tupi, something of a lingua franca four hundred years ago.

> *Jurema, son of Tupi, fair coboclo!*

If you are naming a child, it means "succulent little spine" (*espinheiro suculento, espírito suculento*). Umbanda followers say it means "fetid thorn" or "I smell bad" thorn (*ju*, "thorn", *remá*, "I smell bad"), and they might know. According to R. E. Schultes, *jurema* means "intoxicating drink."

> *At the time of their discovery by Europeans, five hundred years ago, the Tupis-Guarani had a tradition so old that they remembered when the Flood reached the Land of the Palms, the Pindorama. The early explorers were confounded by their wisdom and knowledge, a mystical theology of great pureness. . . .*
>
> *They spoke a sacred language called Nheengatu, but knew of a language even more ancient, the First Language, the Abanheeng. They knew of a technique of slow, repetitive singing that produced a hypnotic effect, allowing them to communicate with the Ra-Angás, the spirit of the Ancestor.*

The Jesuits knew of their knowledge.

> *In this article it is intended to subsidize reflections on the meaning 'to know' . . . to bring the aroma of the Jurema to the debate on the problem of knowledge.*
>
> *—José Francisco Miguel Enriques Bairrão,*

from the *College of Philosophy Sciences and Letters of Ribeirão Preto*, who presents an immanent semiosis of the persistent and multi-faceted presence of jurema, with roots botanical and ethnic that remain outside of the garden, where the semantic trunks of the "coboclo cult" in this Brazilian wild lushness reflect on social cognition and a dialog with knowledge.

First off (he says), it all has ethical implications and political repercussions, the relation of the popular (say, common) citizen to the power to know (like, (as he says) (in the majority of times), as interlocutor) reduced to an object of analysis in the reaffirmation of the superiority of the culture of the elites (in time of the recognition of the differences).

◆

THAT IS TO SAY
the trend to flatten knowing
to the results of the belief
in the brain and the neurosciences
(and thereafter a knowing reflection (in revolt?) and at risk to hear God but, at least, or anyway,
or even preferably, in the form of a beautiful and sensuous woman).
THAT SAID
thinking is not subordinated to the conscientious control of the uses of language!
NOR, (we might add)
subtle and complex reflections as the default state of consciousness

not depending on erudition, nor on "intelligence," . . . (. . .)
the incident forms of JUREMA in the Brazilian universe . . . (. . .)

a redistribution and democratization of the power to know. (period)

Devil Catholic Sacred Grass Tobacco

& the white colonists, the wine, the stream bed, wheat for cassava
and racial miscegenation, the links of great alliance aboriginal tribes attacks survive the settling of Brazil.
shipwrecked and Christian, reason and necessity,
in the Pernambuco
where the Tupi language predominated until the middle of century XVIII.

This in the Sanctity, in the Confessions of Bahia, 1591/1592:
Inquisition found churches, mythic constructions
of "Father" "Mother of God", rosaries and crosses, polygamy, dancing and chanting,

an hallucinogenic drink made with the roots of the Jurema Tree.

Tobacco: insufflating/nostrils/officiant
& the dust of falling leaves. It was mystical and they called it "Sanctity."

(ADAPTED FROM MANOEL LOPES: "SARAVÁ UMBANDA")

◆

The Plant In 1997, Yatra (W. M. da Silveira Barbosa) visited several tribes in northeastern Brazil to learn about their ritual use of jurema and its preparation. Yatra, quite qualified as a judge in such matters, realized that the brew, as prepared by the Truká, had no hallucinogenic effects. That is, while the brew was demonstrably "entheogenic," inducing trance possession (what else could "entheogenic" mean if not possession by the gods?), it was not visionary, in the "psychedelic" sense usually associated with the phantastica. With some delicacy, she offered to prepare a brew with the seeds of *Peganum harmala* (which she just happened to have with her) as an additive.

The results, in her words, were incredible. At that point Yatra adopted the role of "psychedelic missionary," visiting the Atikum, the Fulni-ô, and the Caimbé. The Atikum asked her, "What is the music of this plant?" To which Yatra was able to respond with a jurema song she had received the night before—plenty enough of a recommendation for the Atikum. The Atikum were so strongly affected by the new brew that some of them fell briefly into unconsciousness. The Atikum were preparing their jurema from *Mimosa verrucosa*, and it is unclear what tryptamine alkaloids might be involved (if any). According to Da Mota, *Mimosa verrucosa* has sedative but not hallucinogenic effects, which does correlate with the effects observed by Yatra.

As Yatra took her leave, one of the Atikum said to her: "We finally found the roots of our culture." It will be *very* interesting to see how this cultural sharing affects the ceremonies and culture of these tribes. From the report of Da Mota

(2001), it appears that both the Truká and the Kariri-Shokó have retained the use of harmel, as their "secret ingredient."

> *Why wouldn't they?!*

Harmel should feel quite at home in the caatinga.

◆

History, "Finding Jurema"

The new coast

> *(they discovered a new coast, a new Indies, with great forests…)*

was covered by a tall and thorny slow-growing tree with reddish wood—it looked a little, to some sailor who had been around, like a tree he knew from India, that they called there "brasil." And they called this new tree, "brazilwood." It's a legume, *Caesalpinia echinata*, endangered now. The people who lived there called it "*pernambuco*."

> *The name given to the plant served to baptize the busy lands for the Portuguese in 1500. Another plant, 'Jurema,' came to represent the ethnic resistance.*
>
> *—Jose Maria Tavares de Andrade*

During the first phase, the uses and significance of the sacred tree were kept secret.

During the second phase it came to represent the armed resistance of aboriginal tribal alliances.

> *compressing coil settlement genocide religious arrest of Indians execute them*
> *bearing the mark of Jurema*
> *& it found a welcome with the Africans: "Candomblés de Caboclos"*

Jurema a hard secret flag, national expansion, aboriginal remainders to full "ethnic movement"— a line of defense for the pluralism of Brazilian cultures.

> *(& there is a "red jurema" also)*

The word a complex semiotic confusion,
liquid and mystical, external and internal, the sacred drink,
the Wine of the Jurema.

Healers and quacks, a spiritual entity, masters of masters, given to you to drink.

> *Jurema, son of Tupi, fair coboclo!*

Mentioned first in the XVI century. And in 1758, on a death certificate, of the Indians of Mopibu,
"made aid of Jurema," herself superstitious.

XVII Century. XVIII Century. Jurema, "an hallucinogenic wine used also in the Amazon."

Somebody must have mixed it with yagé.

"Juremeiros Indians" were sent to the northeast to fight the French.
& with a war on, Jurema could be accepted and the theological problems left to the Jesuits. Magical witchcraft.

1768, Dr. J. M. Noronha:
big festivals, the most skilled warriors, a drink from a tree called *Jurema*
whose virtues are "*nimiamente narcótica*."
Yes, especially, before going to war:
necklaces and masks, tobacco and jurema, "*ouricuri*." "*toré*,"
active movements, recognized peoples, traditionally recognized peoples,
intense mobilization, Kariri, Pankararú, politics.

> *& a showdown, with our bodies. The power of non-violence in action. The power is from solidarity and the commitment of warriors.*

> "a massive ethnic mobilization"

To cleanse the body. It's kept secret. (How could they communicate
with the deceased, it was asked).
The purple jurema, the white, only the black has the thorn. Cleanliness. The
white is to banish malignant spirits.

(ADAPTED FROM JOSÉ MARIA TAVARES DE ANDRADE)

◆

The Plant

That the jurema tree was able to save so many people from cultural extinction and total poverty is a testament not only to the power of the tree, but also to the power of ritual and faith. Saving a people is power indeed. That the beverage, as consumed, may have had no visionary properties, in the psychedelic sense, makes its success even more remarkable.

> *Well, or does it?. . . Look around you.*

The question is, was jurema *ever* hallucinogenic? Both documentary and folkloric evidence strongly, though not conclusively, suggest that is was. Schultes hypothesized the if jurema were indeed hallucinogenic, as he believed, then there must be a missing admixture plant containing a monoamine oxidase inhibitor. An obvious place to begin would be with the passion flower beverage that is sometimes consumed in quantity along with the jurema (further discussion in Notes). Hopefully, future Brazilian scholarship with primary Portuguese sources will clarify this issue.

Schultes (1979), stating that *vinho de jurema* was "formerly a major hallucinogen," summarizes a number of early reports.

> *An early—and probably reliable—report by the Brazilian writer Caminhoa, quoted by the Brazilian botanist Mello Morais in 1881, referred to the hallucinogenic effects of jurema. He stated that medicine men experienced "fantastic and agreeable dreams" following its ingestion.*

THE DOCTOR'S RATTLE SONG

Other early reports suggest that the use of jurema was once much more widely spread, extending into the Amazon. Mello Morais also reported that jurema bark was used by country folk to combat fatigue, and that the bark made an "intoxicating wine with delightful effects."

Oswaldo Gonçalves de Lima (1946) called the *jurema prêta* used in the *ajuca* ceremony the "miraculous drink" and identified *Mimosa hostilis* as the tree from which it was made. He further stated that *jurema branca*, based on *Mimosa verrucosa*, was used as a stupefacient.

The Ally

We formed a circle and passed the talking stick to the Doctor. The Doctor held the stick in one hand and picked up a rattle in the other. It was all rattle-talk, there were no words and he didn't sing. It was all the rattle, expanding and moving around the circle over each of us. It wasn't words but the story was a kind of creation myth, how the goddess worked in the Beginning, and how the Beginning was the same as what was happening always, and how she reacted and dealt with fearsome demons, or little annoyances or doubts, all told through tiny differences in the beat, slightly ahead or slightly behind, small changes in the rhythm revealing her whole personality and adventures. He finished and passed the stick to Rabbit. "Ho!"

Pharmacology

Jonathan Ott (1998), in an influential series of self-experiments, determined what he found to be the minimal amount of harmel seed (as an MAOI) necessary to potentiate orally ingested DMT (dimethyltryptamine). Ott settled on 2.0 mg/kg of harmine/harmaline base (with threshold activation at 1.5 mg/kg for harmine, somewhat less for harmaline). My own experiments, along with the observed experiences of colleagues, indicate that while 2.0 mg/kg is an *adequate* dose for tryptamine activation, 2.5 mg/kg to 3.0 mg/kg increases the activation and is preferable (n > 100). 200 mg of harmine/harmaline salt, purified from *Peganum harmala* seed, became a common dosage.

While the alkaloid content of harmel seed varies, Ott settled on three grams of harmel seed (one level teaspoon) as an adequate activation dose. As above, I suggest somewhat more. Remember that Ott was trying to take as little harmel as possible. Ott disliked his experiences of the effects of β-carbolines and fostered a sort of pharmacological reductionism—that, despite overwhelming contrary opinion from *ayahuasceros*, the only purpose of the harmine was to potentiate the DMT. Richard Evans Schultes shared this viewpoint somewhat. Perhaps there is, in modern western culture, a bias towards visual entertainment that elevates seeing colors and movie-like visual scenes above all other aspects of the ritual. But we should not dismiss the elder wisdom on the powers of the vine. (An analogy, which may or may not be apropos, is the way that British ethnographers of the Imperial period tended to emphasize the more bizarre and shocking aspects of native rituals they observed, while deemphasizing those quieter parts related to healing and community-building, a bias evident even in as excellent a scholar as Frazer.)

At the end of his 1998 paper Mr. Ott reports that 25 g of *jurema prêta* root bark, prepared in the traditional manner by squeezing the pounded bark in cold water, was psychoactive by itself: "DMT-like effects." As a pharmacological explanation he hypothesized that some significant fraction of the DMT alkaloid in the plant was bound or complexed to some larger molecule, thus protecting it from gastric MAO. On the basis of this experiment Ott stated that "the apparent inactivity of simple Atikum *jurema prêta* potions is thus likely due to insufficient dosage or perhaps a weak strain, and not to the lack of some lost ingredient." Given the large number of Indian groups using jurema, "insufficient dosage" seems unlikely, though not impossible, and dismissal of the "lost ingredient" possibility seems premature. There are many avenues for research here.

In 1999, David Aardvark published a report in *Entheogen Review* replicating Ott's success, stating, in fact, that the experience was "indistinguishable from smoked DMT." Strong stuff. And though personally, I've never found *any* liquid DMT preparation, even very strong ones, to be like *smoked* DMT, such a discovery would be something like finding the Holy Grail of ethno-psycho-botany, and indeed was an impetus for the beginnings of my own studies in this field over thirty years ago. One would have expected a wave of ecstatic and confirmatory reports, but these have not materialized, despite the availability of botanical sources.

On the assumption that lemon juice would not affect the results (the potion is, after all, going into the stomach), I first tried a lemon-water extraction of *Mimosa hostilis* on a group of unfortunate though steady and experienced volunteers (n=8). Dosage was 150 to 200 percent of the usual jurema/harmala brew. This experiment produced negative results, though many felt that there was "something" there, but that it just couldn't break through. "All of the nausea and none of the fun," as one member put it. This same group had tried 150 mg of harmaline/harmine extracted from *Peganum harmala* just by itself the month before. All agreed that harmel *sans* jurema was more visionary (and more fun) than jurema *sans* harmel.

At that point Mr. K. Trout informed me that it was "well-known" that jurema extracted with any acids, which is how it is generally done, is inactive without an MAOI; that Ott and Aardvark had extracted with neutral cold water. I decided to try one more experiment, replicating Aardvark's preparation exactly. Thus I prepared 25 g of bark of well-proven effectiveness with a neutral cold water extraction and drank it on an empty stomach—25 g being about four times my usual dose. I experienced no visionary effects whatsoever—not even the closed-eye visuals from music that I can usually almost call up at will (n=1).

Considering the large number of plants involved in various jurema preparations, many of which have not been adequately investigated chemically, the issue is far from settled.

> *Yet the experiments must continue!*
>
> *—A. Ginsberg*

The Ally Each man's song became a prayer.

Rabbit started with a long aching groan, but bit by bit, by repeating and referring back to what he'd already expressed, it became an extended frenzy of glossalalia that kept building into ecstasy. This was answered, in turn, by Jah's song, a long composition of sound and rhythm, celebrating the virtuosity and mastery born of a long disciplined practice. How could it be followed? Each song seemed to speak the final word. "Ho!" He passed the stick to Jimmy. Jimmy sat quietly and then stood up with a rattle, swaying and dancing and improvising light, simple phrases, the easy way, nothing to it, nothing complicated, just the joy of being free. And passed the stick.

Poesis The Bad Buddha Medicine Brew

200 g Mimosa bark (finely ground)
handful of chopped ginger
48 oz water (6 cups)
16 oz (2 cups) fresh lemon juice

Bring water to a boil.

Put ground Mimosa and chopped ginger in a large glass jar and pour hot water and lemon juice in. Avoid contact with metal.
Seal the jar, shake, and refrigerate for 3 to 4 weeks, shaking gently once a day (a week, or even less, is probably adequate).

Sing prayers when doing the initial preparation and the daily shaking.

Strain through filter paper, such as a coffee filter. Several changes of filter will be required, as the finely ground Mimosa will clog the filter. Naturally, vacuum filtration would improve yield.

Product is a lovely crystalline, garnet-colored brew.

Store in the refrigerator in glass or plastic containers, or in the freezer in plastic.

Starting dose is about 1/3 to ½ cup (8.3 or 12.5 gms of bark respectively per dose).

The Ally Purging is not an uncommon occurrence. Purging is usually a deep catharsis.

Getting rid of the shit!

I find that if the full visionary effects of the jurema aren't quite fully manifesting, purging brings them out. It's like squeezing a sponge. Wherever the power is blocked, or maybe clinging to a ledge someplace afraid to jump, purging pushes it over and everything lightens, in all ways.

If someone were having trouble purging, needing to but not quite there, other members of the circle might help out with a purging song.

Gahk! Ptah! Hum!

Things happened "as needed." Between rounds the circle was allowed to break up into smaller groups. Some talked. Some danced. At least one person was always attending to the spirits of the circle, drumming softly, or shaking a rattle, or playing an instrument, listening, keeping track of the spirits, encouraging where appropriate, or adding commentary. And just by its own energy, someone else might join in and then someone else and it would become a jam.

COYOTE JOINS THE BAND, PETER BLUE CLOUD

Somehow I staggered to my feet. Three of the other men were already up and playing. I strapped on my bass and searched around to find a key that sounded more or less compatible.

The room was moving. I looked across at Jimmy Da Vinci and he was looking at his keyboard—riffing with his right hand and chording with his left. I glanced at Dr. Dave, wailing away on his djembe and shaking his head from side to side in time with the music. Then I started wonder why no one was looking at me—Dr. Dave had his eyes closed and Jimmy was staring at his keyboard. Was I doing something *wrong*? What was going on?

Just then Dr. Dave opened his eyes and then I really lost it—the tempo, the fingerings, the whole flow of the jam. In desperation I closed my eyes and then I *saw* it. The music was pulsing in a visual form—a three-dimensional vortex with colors, spirals, and arabesques springing off of it. I started adding on to one of those—adding little spots and dashes and then drawing a long wide stroke underneath it. My eyes were still closed but all of a sudden I could see Da Vinci and the Sage and Dr. Dave and we were all looking at each other. Jimmy shouted out with a long hoot and laid on a new pounding splash of color that flipped in a loop-de-loop. We were all together and we increased the tempo. My left hand seemed to be moving by itself up and down the neck of the bass. I didn't know where it was going but I liked what it was doing.

"Wow," I thought, "this must be like what real musicians do."

Matters of State and Liberty

While no *Mimosa* spp. are controlled by drug laws, some of them do contain scheduled substances. This is a murky legal area, and best avoided. *Mimosa* bark is available from many herbal vendors on the world wide web.

History, "Finding Jurema"

Jurema is the city-state of the spiritual world.
Drinking opens the sky completely red, you see
the flowers that are inhabited
by the souls of the ancient Indians.
& the cult spread . . .

> *Jurema is a sacred wood*
> *Where Jesus rested*
> *That gives "force" and "science"*
> *To the good master custodian.*

It hid Him from the soldiers of Herod during the flight to Egypt.

A Being inhabits the tree: some think it Christ, others Dionysus.
Or Jurema, Protector of Animals.

> *"Opening the Table, with Light and Love*
> *Opening the Doors of the Juremá*
> *Calling the Guides*
> *To work."*

(In the center of a room totally empty of furniture one meets the Table of Jurema. There are cachimbos for smoking, a metallic cross, candles, a small image of a saint, a pot of jurema, a pile of tobacco . . . The people sit down holding maracás. In front are the Master and the foreman and the woman who is hosting.)

> *The drink of the magic ones.*

The Jurema is the blood of Jesus which the Apostles caught and placed within the base of the Tree.

> *It is important to bear in mind that the secret doesn't always hide anything.*

(and it can be an opposition to the domination of hegemonic religious and social forces)
(as among the Atikum of the Umã)
It is so necessary to have a history, to be a people.

> *(Old Caboco is called, King Jurema is sung for, and Atikum Master, and*
> *Jupi Master, and King Canindé and his friends, Manoel of Mata and*
> *the Hunting Master.)*

There follow consultations, and more enchantments, and everyone participates, and makes some sound, or shakes the maracá. It is done at night and everyone is barefoot.

Anjucá: "angel here"

The antithesis of acculturation.

Ôh, Jurema encantada!
Que nasceu em frio chão!
Daí-me força e ciência.
Como destes a Salomão!

O Jurema, cast your spell,
you, born in cold earth,
give me the force and science
that you granted Solomon.

—tr. Steven White

The Ally

MAN: *Hi Darling, well, I'm home from my Medicine Circle.*

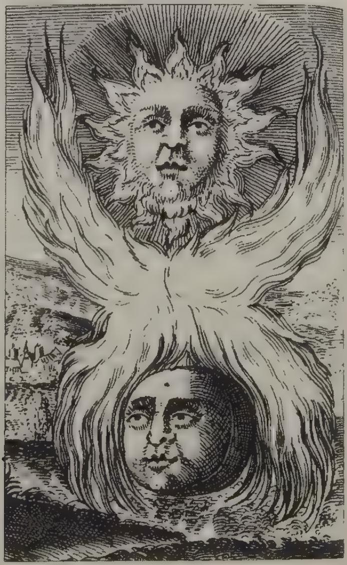
WOMAN: *How are you feeling?*

MAN: *I'm feeling, well, (starts kicking dust and pebbles away with his feet), kinda like, well, look. . . like this.*

WOMAN: *Wow.*

MAN: *Yeah. . .*

WOMAN: *Wow.*



SOL Y LUNA, 1618

LIAO DYNASTY, 907-1125, CHINA

THE TWO-DRAGON PROBLEM

The two-dragon problem is one of the severest tests of working with a companion. I have seen the two dragons set back partnerships that were of great promise. Dragons are fearsome and generally very old. Their existence is usually denied—that's part of their dynamic.

In the West, it is traditional to slay dragons. That seems so wasteful. On the poison path we favor taming dragons, enchanting them perhaps, rather than slaying or banishing. Dragons are suckers for laughter.

Would it not be wonderful,
singing dragon-songs, to
climb upon her back, to let her
stretch her awesome wings,
lift off, and spew fire
from her nostrils?

Actually, dragons are hermaphrodites. The first dragon was just a fiery, unblinking eye that copulated with itself, trying to see its own reflection. Thus, some say, was the world created.

A narcissistic quality. Thus the alchemists wrote that it takes a brother and a sister, working together, to win the dragon's pearl.

Sol and Luna.

A skilled companion can often spot a dragon that her partner cannot see. Maybe one partner is too close, so that the dragon is hidden in the smoke and fumes. If there is a high degree of trust between the partners, maybe you can accept your partner's vision and turn and face the dragon blocking your path. Then, well, you know what to do.

The problem is when two dragons appear simultaneously, when the sudden startled turning from one dragon—from the sudden presence of the Ancient Fear—provokes or conjures forth a second dragon that attacks your partner. Without absolute commitment and faith in the process, maybe she will think, "why is my partner attacking me? I'm getting out of here." Each dragon provokes and enflames the other. The results are painful at best, at worst, tragic.

Everywhere in the world there have been dragons.
Crocodiles.   *Frogs, hiding*
          in the mud of the hippocampus.

What can be done? Is there a technique that can help in such a time? No one I know has an adequate answer. The matter of the two dragons will probably remain one of the serious challenges of our Work. Ritual structure is perhaps the most traditional and time-tested response. Again, though, remember: dragons are enchanted by laughter, and by articulate words. The immense value of precise articulation has to do with the dragon's demon-like eyes, and that demons are frightened by their own reflections.

Still, the very nature of dragons is that they are denied. After all, dragons are creatures of the imagination.

—such beautiful, terrible dragons,
lounging at ease
on a mound of pearls.

If demon-work is a necessary part of your progression, don't try to work with a partner who doesn't know the shadows, his own shadows. Don't work with a partner who is afraid of negativity or has not acquired some skill in dealing with it. And we don't mean avoidance or banishment. Statements such as "there is no darkness in my heart anywhere" should put you on your guard.

Only vampires cast no shadows. . .

Partners on the poison path have to be ready for occasional rough weather. That ought to be clear and obvious.

Yes, but, she was soooo beautiful. And wise.
And magical. And she was a doctor-woman. . .

There are sun doctors and moon doctors. Doctors of the poison path must master both disciplines. And then there is one last, extra little requirement . . .

if you think you know what you're doing, you don't belong here.

Not at this level of the Work. We're explorers here. We don't need the cloud of demons that generally follow behind those who never make mistakes.

Now they're aroused. They're nipping my heels, and the back of my shirt. . .

Dragons can be propitiated by sacrifice.

an old corpse will do. . .

Your own, that sacrifice—to be able to peer through the dragon's eyes yourself, to flex your fingers and feel dragon's claws, to know the words that melt stone.

Would it not be wonderful
to rise together
through the wrath, through the joy
of angry fire, all that is dross
burning away. Would it not be wonderful
to enter the Watery Palace.

Sacrifice is soma—the primal poison, the churning of the lingam in the Milky Way—the elixir created by the alliance of gods and demons.

Darting glances from lidless eyes
—derkesthai—
moon scaled, watery places, wet places,
those most feminine
places
of our bodies.

Aion. The Sap of Life.

The dragon's mouth is the Gate of Hell, where all the heroes of our path have ventured. The way out of Hell is clear from Revelations:

when you hear your Partner's questioning knock on the Great Door,
answer.

According to the old stories, certain medicine-women suckled dragons. Consider any such familiarity auspicious.

Our deepest fears are but dragons guarding our deepest treasures.

—Rilke

Walking the path of demon-work leads to states of extraordinary openness accompanied by great attractive charisma, and also an abyss-like vulnerability. Traditional spiritual disciplines have evolved structures to protect the seeker in these states: precepts, rules, monasteries, vows. For lay practice, especial care must be taken—archetypal roles will beckon—the Wise One, the Guru, the Healer, the Poet, or maybe the Seducer, or the Shaman—

Pitfalls. Tiger-traps.

The role starts defining you, rather than you your role.

But maybe you are made of deeper stuff—and maybe your companion is also. Maybe you can trust her mirror.

Friends and family members guide us on the path.

We seek the land of the True Dragon:

> *Vast emptiness. Nothing holy.*

Nothing sacred either. Nothing to cling to, and no one who might cling.

> *Not knowing is most intimate,*

old Dizang said.

> *So long as you seek peace of mind and Buddhahood, you cannot realize the peace which is true poverty of spirit. You cannot acknowledge the Buddhahood of your own original nature which wills nothing, knows nothing, wants nothing.*
>
> —*Robert Aitken, The Gateless Barrier*

The Pearl of Great Price.

AIR A dhealgh le Searasún.

THE BEARD-PULLERS

THE POISON OF DREAMING: PEGANUM HARMALA

Espand and espand seed,
Thirty and three espand seeds,
By the grace of the One God,
Muhammad planted it, Ali collected it.
Fatima made it smoke for the sake of Hasan and Husayn.
In the name of God, in the name of the Prophet
May the eye of the envious and of envy be burst.

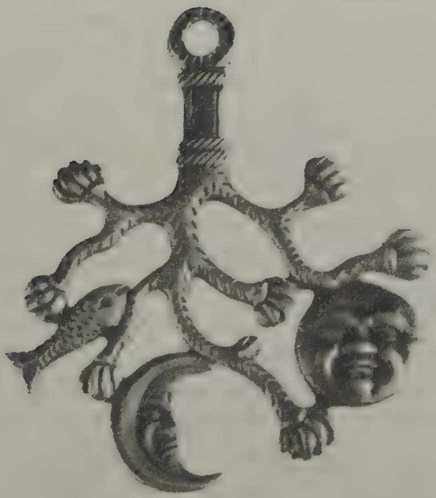
—Iranian harmel verses, in Flattery and Schwartz

Common Names Syrian rue. African rue. Esfand. Harmel. Turkish Red. Moly. And, perhaps, haoma.

The Plant We're back in the desert.

Related Species That depends on what we mean by "related." The true rue, *Ruta graveolens*, in the citrus family, is related by common name and by a similarity of morphology—deeply incised and lobed leaves—and to a lesser extent by taste: both are bitter. The two plants have been trading names for several thousand years. *Peganum*, the Linnaean epithet for the genus, is from the Greek πήγανον, referring to *Ruta graveolens*. Dioscorides, who wrote the first botanical description of *Peganum harmala*, called it πήγανον ἄγριον, or wild rue.

> *This plant grows in Cappadocia and Galatia in Asia and they name it* mūly*; some call it wild rue (*saδāb γayr bustāni*). This is a shrub which has many stalks extending from one base. Its leaves are longer, softer and more strongly scented than the leaves of garden rue, and the flower is white and the head is a little larger than the head of garden rue and is triangular and contains the seeds, reddish in color, with three angles and of intense bitterness. The seeds are what is used. They ripen in autumn. Mixed with honey, wine, chicken gall, saffron and fennel juice it is useful for weak vision. Some call it* ḥarmalā *and the Syrians call it* basāsā *and the people of Cappadocia call it* mūly *because it is similar in having a black root and white flowers. It grows on hills and in fertile places.*
>
> *—Dioscorides, from the Arabic, in Flattery and Schwartz*



RUE SPRIG AMULET

Abu Hanifa al-Dimawari, in _The Book of Plants_, circa 895 CE, added that there were two kinds of harmel, red and white.

Flattery notes that where harmel has been introduced into areas where the garden rue, _Ruta_, is already known (as was the case in Greece), harmel is described as a kind of rue, as in our “Syrian rue,” or “African rue.”

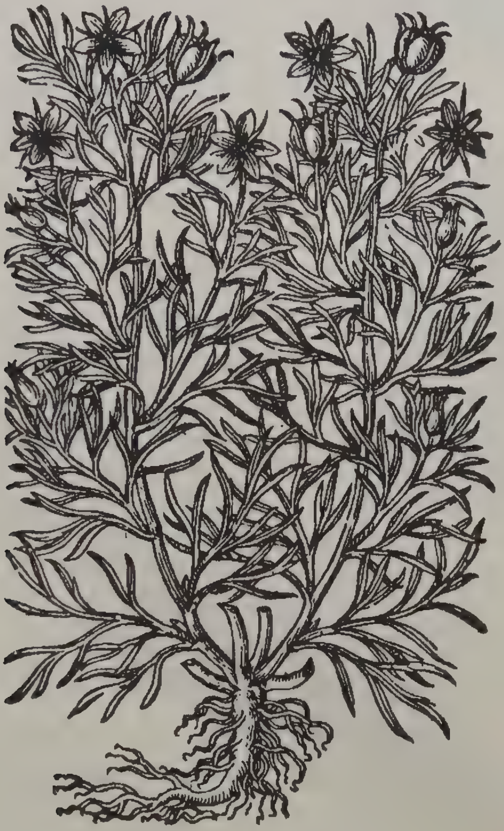
> _Likewise, where harmel is the older plant,_ Ruta _has been named from harmel (e.g. Coptic_ bašouš _[‘Ruta’] < Syrian_ baššūūšā _[‘harmel’]; Bengali_ ermal _[‘Ruta’] and Berber_ iurmi _[‘Ruta’] < Arabic_ ḥarmel _or_ *ḥurma _Armenian ‘sbant of Aleppo’, Bengali ispund and Persian sepandān-i ganda [all ‘Ruta’] < Old Iranian *svanta- [‘harmel’])._
>
> _—Flattery and Schwartz, §53_

One of the names that Dioscorides notes for harmel is the name of the magical plant, moly, that Hermes brought to Odysseus to break the spell of Circe. Other plants, such as garlic and “purely legendary” have been suggested for moly, but harmel’s long and venerable reputation as an apotropaic certainly fits well with a plant that Homer might have known as a spell-breaker. Carl Ruck (1994) noted that moly is difficult to pull out, which is quite true of _Peganum harmala._

Chemically, Syrian rue contains the β-carbolines harmine and harmaline that are found in _Banisteriopsis,_ the ayahuasca vine. By Linnaean taxonomy, harmel is related to lignum vitae and to _Larrea_, the creosote bush of the Sonoran desert. The Caltrop family, Zygophyllaceae, is mostly tropical, but even there tend to the drier and scrubbier areas. In temperate zones, they’re a scruffy lot—the well-named puncture vine, _Tribulus terrestris_, probably being the most widespread species. _T. terrestris_, it should be mentioned, does contain harmine, though I was unable to recover it with the Hasenfratz acetic acid/sodium chloride extraction. The chemical basis for _Tribulus terrestris_’s current popularity as a body builder, aphrodisiac, erectile enhancer, and testosterone stimulant is said to be furostanol, a steroidal saponin. At the very least, using the “old system,” puncture vine’s aggressiveness and tenacity suggest investigation as a tonic.

Both _Tribulus terrestris_ and _Peganum harmala_ are often listed as “noxious weeds” by various county, state, or national governmental agencies. While isolated stands of _Peganum harmala_ have established themselves at out-of-the-way locations in Nevada and New Mexico, and along highways such as Interstate 10 in Arizona, the “African rue” is not particularly aggressive and is hardly a threat to native vegetation—though, admittedly, harmel is difficult to eradicate once it is established (plowing just spreads the roots). The impetus for the eradication program seems to be based on rue’s toxicity to sheep, which, as so articulately recorded by John Muir, _are_ a threat to native vegetation. Actually, most of the reports I’ve seen say that livestock avoid Syrian rue, because of the bitterness. States just seem to add plants to their list of neer-do-wells because some other state did.

Kinda like drugs.



Hermelkraut. Harmala.

It shouldn't surprise us that a number of the other plants which we have discussed in these volumes are placed in the "Rogue's Gallery of Noxious Weeds," as it's called on a Colorado website. We do, after all, call them *allies*. We have history. *Artemisia absinthium*, wormwood, and *Hyoscyamus niger*, black henbane, are two common examples.

And then there are the REALLY bad lists. . .

Like the Vatican's *Index Librorum Prohibitorum*, which includes about a third of the authors in the University of Chicago's *Great Books of the Western World* set. Or the "Controlled Substances Act."

Rogues. And felons.

And getting back to relationships, for some of us, *Peganum harmala* is related to *Mimosa tenuiflora*, because we drink them together.

Rogues. And felons.

Part Used The seeds, or, in some cases, the extract therefrom. Some people smoke *Peganum* seeds, and there are reports that Bedouin and other Middle Eastern peoples inhale the vapors from burning harmel seeds for some psychotropic effect. American experimenters have reported enhanced and extended effects from tryptamines after smoking *Peganum* seeds, due to their MAOI properties.

Effects Sedative, narcotic, mildly to moderately visual. "A little like opium." At plus forty minutes I'm usually wondering why we can't just curl up in our sleeping bags and nap for awhile. Effects vary with dose, and, to a certain extent, with expectations. Also, there are evidently metabolic differences with respect to harmel—"hard-heads" consistently wanting about fifty percent more than anybody else. It is said that only the "gifted" receive visions from harmel. This gifted fraction seems to be less than one-half but more than one-tenth. (Participant-science is often better at gathering qualitative data than quantitative data.)

The Plant Harmel is ruderal, populating disturbed ground such as roadways, overgrazed pastures, dumps, and the other characteristic scars of human passage (such as caravan routes). As such, it joins a long list of anthropophilic camp-followers including tobacco and marijuana that we have already examined. Harmel grows as a shrub, up to about a meter in height, branching from the base. The flowers are white, the leaves fragrant, and the seeds reddish-brown.

James Duke lists the herbal properties of harmel as "abortifacient, alterative, amebicidal, anodyne, aphrodisiac, diuretic, emetic, emmenagogue, intoxicant, lactagogue, narcotic, soporific, stimulant, sudorific, and vermifuge."

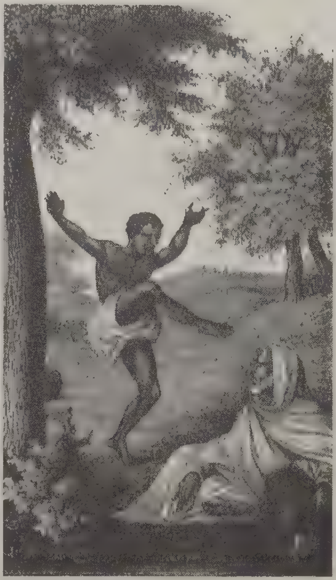
Frederick R. Dannaway, an anthropologist studying folk medicines of Lebanon, adds:

> *In Lebanon, Peganum is called* sadhab al-barrī*, and also* ḥarmal *and* ghalgat-al-dhib. *In the local medicine it is for melancholy, depression and aphrodisiac. Also for antispasmodic, rubefacient, laxative, and of course for skin rashes which is always [its] most common use.*

The above list, alas, fails completely to convey the rich stories and history from which each entry is distilled.

Galen said that harmel was warm and dry "in the third degree." Arab herbalists added other properties. 'Isa ibn Massa, in the 9th century, wrote that at the Marw hospital harmel was of the greatest use in treating epilepsy. Al-Razi, one of the more famous and distinguished of the medieval Arab herbalists, noted that *ḥarmal* broke up pain and induced the flow of menstruation and urine. Ibn Wafid, who died in 1074, wrote that "It is useful to those possessed by love because of inducing intoxication and sleep." Another herbalist added that "it inclines one to coitus."

> *In harmel there is an incantation, and in its steam there is a remedy for seventy-two diseases.*
>
> —*Ṭibb al-Imam ʿAlī, in Dannaway*



Arabic herbalists were also well aware of harmel's intoxicating properties. According to Ḥubaysh ibn al-Ḥasan [d. 880 CE] "It causes vomiting and intoxicates like wine or nearly so" (Flattery and Schwartz). Wine was used for making harmel extractions and is well suited for this purpose, especially if the wine has gone a little sour, as the harmine and harmaline acetates are quite soluble.

The great Ibn Sīnā (Avicenna), the founder of the Unani system of medicine and whose *Kitāb al-Qānūn* has been called the single most influential book in all of medicine, mentions harmel:

> *Harmel is good for the pains of the joints*
> *and it contains hazaian powers.*
>
> *—Ibn Sīnā (Avicenna),*
> *Kitāb al-Qānūn, in Dannaway*

Dannaway explains that "hazaian" is an archaic word meaning "drunken or hallucinogenic, like the Sufi 'drunkenness' of intoxicated poetry." Harmel has been known since ancient times for its visionary properties, as is evident from its Persian names, *isfand*, and *sepand*, deriving from Proto-Iranian **svanta*, which means "sacred," or "possessing productive numinous power" (Flattery and Schwartz, §59).

In the Mandaean *Šafta d̲ Šambra,* harmel (*šambra*) is called the "king of all drugs," and "Protection." Virtually identical phrases occur in the Avestan *Yasht* referring to the use of haoma (Flattery and Schwartz, §84).

◆

The Evil Eye

By far the predominant use of harmel seeds is as an apotropaic, to ward off the evil eye, the *Mal Occhio,* as the Italians call it.

> *Der böse Blick*

Belief in the evil eye is not at all universal—it has a clear geography—but within its sphere of influence it is one of the oldest beliefs known to anthropology, attested at the beginnings of written history in Sumer five thousand years ago. And it has been the subject of numerous learned treatises for close to half that time.

The distribution of the evil eye conforms closely to the cultural areas of the Indo-Europeans and the Semites. For this reason some believe that it may be Sumerian in origin. According to John Roberts, the evil eye occurs in only 36 percent of the world's cultures. It is not found in China, sub-Saharan Africa, nor in the indigenous Americas (the prevalence of the evil eye among Indians of South America today is thought to be due to the influence of the Portuguese and the Spanish).

MERMAID CHARM

The evil eye is associated with envy ("envy" < L. *invidia*, in turn < L. *in videre*, "to see," or "seeing") but envy alone cannot explain it. The evil eye can cause sickness, wasting, bad luck, and a host of other ills. Babies, children, and dairy cows are particularly vulnerable to the *mal occhio*, as are any who are enjoying especial good fortune. Esfand is commonly burned at Iranian weddings.

Blue beads, red threads, cowrie shells.

One should never look at a baby too long in countries where the evil eye lurks, nor be overly lavish in one's praise of another's children, or, well, just about anything. If one must praise, the praise must be accompanied with a deflecting phrase, such as "God is great," or by a gesture, such as spitting. Spitting can be used defensively as well, if one is suspicious that an evil eye has been cast.

The Sign of the Fig, the Hand of Fatima, the Sprig of Rue.

The evil eye is not necessarily malevolent, in a purposeful sense—it can be cast quite by accident and without any knowledge or intent on the part of the caster, and, as such, according to the Moorish historian Ibn Khaldûn (1332–1406), to be distinguished from sorcery, which was a capital offence (Dundes).

Mannerly customs related to the evil eye are many. In addition to avoiding public praise, boasting, or ostentatious (or even any) displays of wealth or success, one would not eat food in front of the hungry, nor would one drink without offering a toast to the health of one's companions. Those who like to find rational explanations for human customs and beliefs suggest that the evil eye is a means of social control, discouraging hoarding. There are many examples of witchcraft and murder that could also be said to function in this context.

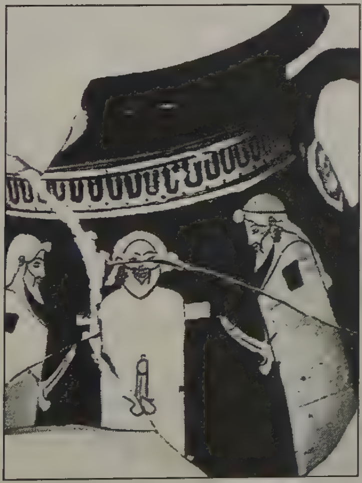
In evil eye cultures, one would never let one's children show off or perform in public, in front of strangers, anymore than the stereotypical Jewish businessman would answer "How's business?" with more than a shrug and an "Oh, not bad."

Alan Dundes, in "Wet and Dry, The Evil Eye: An Essay in Indo-European and Semitic Worldview," proposes that the evil eye has to do with "drying," in a setting where the supply of "water," whether material, vital, or spiritual, is limited. The idea of limited resource in crucial to Dundes' hypothesis.

Dundes' proposal is very attractive, and explains a number of otherwise perplexing features of the evil eye, such as its connection to milk. Returning an infant to the breast after once weaning it is a widely accepted cause of evil eye, and the drying up of milk in a cow is a well-known effect. Besides cows' udders, male genitals are also at risk to the evil eye, and touching the genitals can be a protection. Dundes points out that life is widely believed to be a liquid, and that death is a kind of drying out. The evil eye is said to have no power over fish.

Pre-classical Greek ideas of the soul fit into this: there were two souls, thymos (φυμός) and psyche (ψυχή). Thymos was associated with the breath, with consciousness, and with the eyes. The other soul, psyche, was in the marrow, or the thighbone, and the head, but was not particularly linked to individual consciousness—it was more a life-force. Psyche had a wet quality, and could dry out—if that happened the person would die and the psyche would wander around with the shades in Hades. It was only later, when the two words began to be used interchangeably, that the soul wandering in the underworld was accorded much personality. It is the wet soul that is at risk from the bad eye.

It may seem curious that harmel, which is so drying, would offer protection from the evil eye, but Martin Schwartz (1989) offers some clues, noting the Iranian association of harmel and male virility. Schwartz links *sadāb* with *ṣab āb*: "Thus *sadāb* 'harmel' could have been understood as 'a hundred seminal fluids', i.e. 'furnishing a hundredfold virile potency'." Schwartz then derives the Turkic name for harmel, *(y)üzerlik*, from *yüz*, "one hundred," and *erlik (ärlik)*, "masculine power." Latin *fascinum* came to mean the phallus (the "membrum virile") as well as the evil eye, and amulets or statues of exaggerated phalli were displayed as a defense against witchcraft.



HERMS, GRECIAN POTTERY

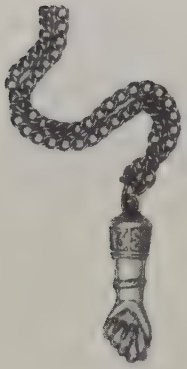
In Pompei, the depictions of *herms* or dwarves with huge phalluses, lamps or door knockers that were flying penises with wings, or the Gorgon cups with erect penises as tongues were apotropaic, not erotic.

> *You have to catch the fascination,*
> *you have to deflect it.*

If, as Dundes suggests, the evil eye has to do with drying and that the supply of water is limited, one might expect it to emerge from the desert rather than fertile Sumer. (On the other hand, as an aspect of greed, which by its nature can never have enough, it would not be surprising to find it in the first of the "civilized states.")

Dundes notes that the evil eye may be connected to the phenomenon of "eye aversion," that staring directly into another's eyes is, among many mammals, an act of aggressive challenge. Likewise, in many human cultures, looking directly into another's eyes is considered, if not aggressive, rude.

Hey you! Who you looking at?



MANO FICA

But Dundes doesn't think that this is a sufficient explanation for the evil eye, especially since the evil eye is so limited in its cultural distribution. (He applies much the same argument to envy.)

Dundes points are 1) that life is liquid, and the "water of life" is reflected in semen, milk, blood, bile, and spittle; 2) that there is a limited amount of the good stuff, and thus one person's gain is another's loss; 3) that the "haves" are fearful of the "have nots"; and 4) that it is all connected to the eye. This last link, as best as I can characterize it, runs like this: fluid = semen or milk; the phallus = the "single eye"; the breasts = a pair of eyes. Since the eye is the phallus, and the phallus is liquid, another's eye is a threat to one's own life, virility, fortune. The protection is one's own phallus, or some symbol thereof. There is much more to Dundes excellent article, but I think the above points are essential.

> *Now, 'splendor' (bharga)—*
>
> *Verily, he who is hidden in yonder sun is called 'splendor,' and the pupil in the eye, too! He is called 'bhar-ga' because with the light-rays (bhá) is his course (gati).*
>
> *Or, Rudra (the Terrible) is called 'bharga' because he causes to dry up (bharjayati), say the expounders of Brahma.*
>
> *—Maitri Upanishad 6:7*

Géza Róheim is able to sum up his "oral retribution anxiety" theory with one pithy line: "The answer to the eyes or mouth of Gorgo-Medusa is the sword of Perseus." He footnotes "mouth" with "This includes oral anxiety, the vagina dentata, and the phallic mother (phallus equals breast)."

Róheim won't let the Hand of Fatima sneak away either. He suggests that the Hand represents masturbation—a quick way, after all, to lose vital fluid.

Freudians. Gotta love 'em.

This explains why "I'm going blind, Dad" would be another proper response to the fatherly question "What are you doing in there with the door locked, Son?," along with the old standards of "Baptizing the Bishop" or "Hailing the Chief."

Actually, Freud's own view, as outlined in his essay on "The Uncanny (*Unheimlich*)", was that people project their own fear of loss and their own envy onto others. That is, "if I were a have-not, I would be envious, therefore . . ." Nothing too mysterious there. Freud then postulates that the *power* of the evil eye depends upon the principle of "the omnipotence of thoughts," in turn based upon the animistic belief that the world is invested with invisible "spirits."

> *It would seem as though each one of us has been through a phase of individual development corresponding to that animistic stage in primitive men, that none of us has traversed it without preserving certain traces of it which can be re-activated...*
>
> *—Freud, 1919*

The concept of "primitive men" is culture-bound and, I think, insupportable. But the possibility of "re-activation" is most tantalizing. However, neither of the above explanations seems to me to adequately address the issue of the evil eye's particular cultural geography.

The Corno, a tiny red horn; a siren with two fishtails; a silver phallus.

A CORNO

Another effort to explain the evil eye was made by Vivian Garrison and Conrad M. Arensberg, in "The Evil Eye: Envy or Risk of Seizure." These authors argue that the evil eye arose in the circum-Mediterranean zone, where dairying and herding groups were in competition for land with settled agriculturalists. The farmers, in constant fear of both cattle-rustling raiders and expropriation by tax-collectors, turned for protection to *padrones*, the local godfathers. The authors point out that this is still the situation in many parts of southern Italy. Protection could be obtained merely by showing the symbol or mark of the *padrone*. Thus they characterize the evil eye as a tri-partite relation (the predator, the intended prey, and the *padrone* or his signet), to be distinguished from witchcraft or sorcery which is between two parties.

Lawrence di Stasi, in *Mal Occhio, the Underside of Vision*, continues the above investigations but ends up with a quite different conclusion. In a Jungian tour de force (with a crucial assist from Norman O. Brown) di Stasi manages to link the evil eye, the wet and dry, the phallus, the vulva, breasts, Joseph Campbell, the Great Goddess, and Mercurius to a spiritual version of "pre-oedipal separation anxiety" (this last from Brown).

Di Stasi concludes that the evil eye represents a sort of underground resistance movement of the old goddess religion against the patriarchal solar/phallic warrior braggarts who seem to be running the world these days. *Mal occhio* is a call back to the group, where goods were shared and no one was allowed to get too far ahead in either wealth or ego. He continues that *mal occhio* is also a call to return to the earth, to give up on trying to know everything, and that if we could only realize that all beings are our mother the separation anxiety and the evil eye would disappear together.

The Jungians, they're always so... wholesome.

Actually, I'm basically in agreement with di Stasi here, though I'm more well-disposed to the neurotic drive to know everything—a drop of poison can add a little buzz. The quest to be free of ambition and to saunter with the old sages, content with whatever comes, is itself an ambitious undertaking. (Still, "not knowing" does convey a certain... freedom.)

"Separation anxiety" tends to be hypostasized, but, in effect, might be extrapolated to mean "as the infant fears loss of the breast, so we cling to our riches and to our personalities and we hoard." Like that.

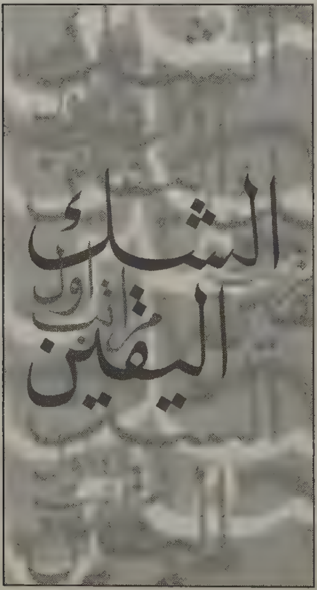
Never before, in my lifetime, have the shameless been so. . . shameless—shameless about greed, and shameless as they lie. They dump their trash and poisons anywhere they can, they pillage, they hoard, they get richer than any medieval king or sultan while impoverishing thousands and millions, and then they drink to it! Maybe some of them hired psychologists to help them get free of their shame the way colonial land-owners hired Indian shamans to get protective magic.

Fuck yeah!
It's fuck or be fucked man.
Whatsamatta—you some kinda pussy?

Freud traced shame to the Fall, when we began walking upright, when we left the earth, when vision supplanted smell as the basis of sexual arousal and our genitals were suddenly exposed and we felt shame. Freud believed that shame was the basis of human culture and civilization. I'm thinking he was right.

Shame is our particular ally, our species ally.

In shá'llah.
God willing.



"DOUBT IS THE FIRST GRADE OF CONVICTION"
—AL-GHAZĀLI

We're not so far from di Stasi here. But for myself, I suggest that the evil eye is about dragons. And the story isn't hidden, either, it's written across the sky. Besides, in the world of metaphor, which is where we are, it is not unfair to judge a theory by poetic standards, and tracking a dragon (I hope) makes a better *story* than "fear of castration" or my good teacher's "pre-oedipal separation anxiety," as trenchant as such ideas remain. The dragon still curls around the pole star in its ancient splendor. Our thesis will be that the evil eye is the ghostly eye of the slain dragon—the dragon's revenge, or curse. Dragons are springs in both Italy and Arabia. Hebrew ʻ*ayin* means both eye and spring. The evil eye is the dry spring, or the well that fails. The spring is life, inspiration, and prophecy: thus the mantis is the python, who is Typhon, the dragon. It makes sense that the eye of the dragon is a call to return to the archaic gift economy, as di Stasi suggests. The dragon is certainly the primal hoarder, and anything beautiful or golden would draw its gaze. The dragon's water is soma, nectar, milk—true treasure.

But when the dragon is killed we are left with the withering.

> *She whose glance is awful.*

We could pick up the dragon trail almost anywhere from North Africa to Norway, or from the Hesperides to Japan, but, since we're in English, let's start in England. Dragons were once fairly widespread in the British Isles. And not so long ago, in the year 793, Current Era, according to the *Anglo Saxon Chronicle,* a fiery dragon was reported flying through the air over Northumbria. Another dragon was reported setting houses on fire in St. Osyth in 1170, and a dragon in St. Leonard's Forest was seen as recently as 1614 (Dickinson, 1998).

Beowulf, the famed Scandinavian warrior-king, killed three dragons, the first named Grendel. The second dragon killed by Beowulf was Grendel's mother, and Beowulf himself died while killing the third. The *Beowulf* poem uses two words for dragon: *dracan* and *wyrm.*

> *Æfter ðām wordum   wyrm yrre cwōm*
> *After those words, the dragon came on in anger*
>
> *—Beowulf, 2669*
>
> *frēcne fȳr-draca   fǣhða gemyndig*
> *the fierce fire-dragon, their deadly feud in mind,*
>
> *—Beowulf, 2689*

This last line occurs shortly before the dragon sinks its bitter teeth into Beowulf's neck. The other Germanic languages are also filled with dragons, and dragon slayers.

DUTCH	*draak*
GERMAN	*drache*
ICELANDIC	*dreki*
DANISH	*drage*
SWEDISH	*drake*

All of the words are cognate with the Greek dragon: *δράκων*, and the Greek verb, to look, to see: *δέρκομαι* (and, of course, with Draco the constellation). Dragons are known for their eyes, and for their petrifying glance. The eye of Medusa turns any who behold it to stone. (When Perseus set down Medusa's head on some seaweed so that he could untie Andromeda, the seaweed was immediately turned into coral.)

In the Celtic branch of Indo-European, a similar story is found in "The Saga of Fergus mac Léti." Fergus had a penchant for exploring rivers and lakes. One day, diving deep into Loch Rury, he glanced upon the sea-dragon, Muirdris, and found her so terrifying that his face was ever after disfigured and Fergus narrowly escaped with his life. Since Irish kings could not be blemished of face, those at court hid his condition from him by removing all of the mirrors. All was well for some years until a servant girl (whom Fergus was beating) revealed his condition to him. Fergus took up sword, re-entered Loch Rury, and after a two-day underwater battle cuts off Muirdris's head, though mortally wounded himself in the process.

Writing of the word "muirdris" in *How To Slay A Dragon*, Calvert Watkins notes:

> *Both branches then, Greek and Celtic, would attest both the verbal root *derk- 'see' and a word for 'dragon, serpent' *dr̥k̑-. If the latter two should turn out not to be cognate—which I doubt—the folk etymology itself could be of Indo-European date, since the danger of the sight of the dragon is found in both traditions, Greek and Irish.*
>
> —*Watkins, p.447*

Watkins cites the archaic Celtic *diuderc*, "gazing," as cognate with Greek *δέρκομαι.*

In Sanskrit, "seeing" is *dṛíshṭi*, and thus *dṛíshṭi-visha* is having poison in the eye, or poisoning by mere look. Dragons are many in India, both demonic and benevolent. India is an intersection, a crossover point of what we might call ophiophilic ("snake-loving") cultures with ophiophobic (snake-fearing) cultures—the ophiophobic current most clearly rooted in the *R̥g Veda*. Hanuman slew a female dragon named Sinhika. Vishnu lounges comfortably on Sesha, or Ananta, the "Endless-One." The Buddha was protected by the King of the Naga-serpents, Mucilinda, while gaining enlightenment. Varuṇa rides the *makara*, the goat-fish. A kindly sea-serpent named Vasuki let himself be used as a rope by the gods and demons to churn great riches and gifts out of the ocean, including the sacred cow, the tree of paradise, the eternal fountain of milk, and the two primal inebriants, wine and *amrita*, (and, also, the dreaded *halahala* poison).

The *Atharvaveda* contains three spells against dragons, or, more precisely, worms:

> *ható rā́jā krímīṇā̄m*
> *Slain is the king of the worms*

This hymn (*AV2:32*) begins: "Let the Sun at sunrise and sunset, destroy with his beams, the worms that live on the Earth" (Chand, 1990), similar to the Ugaritic spell to destroy Yam, a dragon with a fish tail, by binding him on top of Mt. Lebanon (Toorn, 1995).

The Indo-European **k^{u}r̥mi-s* gives Old Irish *cruim*, Pahlavi *kirm*, both meaning worm and dragon, as do Old Norse *ormr* and our Beowulf's *wyrm*, from **u̯r̥mi-s,* Latin *vermin* (Watkins, p.522).

In the *R̥g Veda*, the dragon slayer is Indra. With the *R̥g Veda* we're already heading west, and the ophiophobic formula becomes more pervasive: the phrase *áhann áhim* ("slew the serpent") occurs eleven times in the *R̥g Veda*, and Indra is often referred to as the slayer of Vr̥tra, the *ahi*-dragon.

> *Let me now sing the heroic deeds of Indra, the first that the thunder-bolt wielder performed. He killed the dragon and pierced an opening for the waters; he split open the bellies of mountains.*
>
> *He killed the dragon who lay upon the mountain; Tvaṣṭṛ fashioned the roaring thunderbolt for him. Like lowing cows, the flowing waters rushed straight down to the sea.*
>
> —*RV1:32, tr. Wendy Doniger O'Flaherty*

Several aspects of the Indra myth relate to the evil eye: the connection of the dragon to water, specifically to the withholding of water; the connection to cows and milk; and the connection of the dragon slayer Indra to soma.

> *sómasya tā´máda índraś cakāra*
> *These things Indra did in the exhilaration of soma.*

Indra kills Vr̥tra after drinking three drafts of soma "to the dregs." (It seems, from *RV1;32*, that the dragon might be drunk also, but perhaps the dragon was drunk on *surā*.) Indra kills the dragon, and, like Beowulf, also the dragon's mother, who lies down to die with her son "like a cow with her calf." The three-headed Vr̥tra lies "like a broken reed," and the waters, which were obstructed, flow forth. The withheld waters are likened to cows penned up in a cave, and lead to the next story, when Indra does release cows from a cave (*RV3:31*). Calvert Watkins derives Vr̥tra from the verb *vr-*, "to block or obstruct." Thus **u̯r̥trám* is "blockage" and **u̯r̥tra-ǰhan*, "smashing resistance," is *vr̥tra-han-*, "Vr̥tra-slayer," Indra's common epithet.

We should note in passing, for future reference, Vr̥tra's role as a trickster:

> *When, O Indra, you slew the firstborn of serpents,*
> *then did you outtrick the tricks of the tricksters (Watkins)*

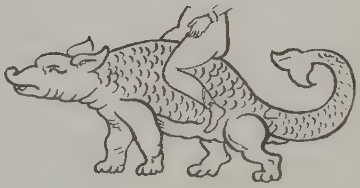
which Wendy Doniger O'Flaherty translates as "overcame with your own magic the magic of the magicians."

Eliade notes that the older god, Varuṇa, is already in decline in the *R̥g Veda*, that Indra is replacing him, and that the Indo-European sky god, Dyaus (**deiw*, "to shine," or "sky," hence *deity*, Latin *deus*, and *Jupiter*, "sky-father," and Tuesday, from Old Norse *tȳr*, sky god) is almost absent. Varuṇa is "the binder" and "the encompasser." As binder, Varuṇa carries a rope and is the embodiment of the web of social ties and obligations and taboos. Prayers are addressed to Varuṇa for release from such debts, some of which could have been incurred, just as with the evil eye, unintentionally, or even in a dream. Varuṇa's other aspect is more cosmic, encompassing the heavens. Varuṇa put the sun in the sky, intelligence in hearts, soma on the mountain, and milk in cows (and likes drinking milk himself). Varuṇa's principle of action is called *r̥ta*, something like "fitting-ness," that which fits. Varuṇa, encompassing the heavens, is dragon-like himself, and Varuṇa and Vr̥tra, if not related etymologically, are associated through the serpent Ahi:

"Varuṇa is assimilated to the serpent Ahi and to Vr̥tra" (Eliade, citing Coomaraswamy). Varuṇa is often depicted as riding the goat-fish Makara, hinting at yet an older cycle of the myth, of dragon-conqueror becoming dragon.

In *RV*6:68 Indra and Varuṇa are praised together: Indra who with his might and thunderbolt slew Vr̥tra, and Varuṇa, who as a Sage stands near in time of trouble. They are both enjoined/entreated to drink their fill of soma:

> *Indra and Varuṇa, drink your fill, ye Heroes,*
> *of this invigorating sweetest Soma.*



VARUṆA RIDING MAKARA

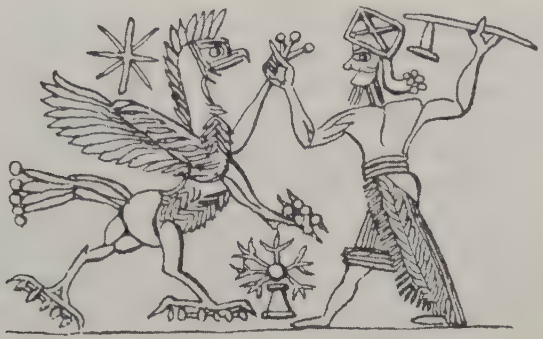
Northwest, across the mountains of the Hindu Kush, we pass through a country of horse and deer-loving peoples whose castings of bronze and gold dragons are usually called "griffons." One of these Saka groups were called *haomavargā*, meaning (perhaps) "those who drink haoma." Griffons most resemble the Sumerian *anzu*-bird, the creature with eagle's wings and the face of a lion that narrowly escaped being killed by Gilgamesh in the story of Inanna and the *huluppu*-tree, where the *anzu*-bird is joined by "a snake that cannot be charmed" and Lilith.

In Avestan we find the great Iranian dragon, Aži Dahāka, three-headed like Vr̥tra, who is slain by Thraētaona, the son of the second mortal to press haoma. *Aži*, like Sanskrit *áhi*, is "serpent" or "dragon." (In Greece, Herakles kills the three-headed dragon Geryon "for the sake of his shambling cows," cattle-stealing being an enduring side occupation of both Indo-European gods and heroes.) Watkins traces *dahāka* to *dāsa*, applied to Vr̥tra, as well as to another dragon slain by Indra: Śambara. The dāsás are the enemies, the "strangers," of whose conquest the *R̥g Veda* makes so much. Dāsás is related to δοῦλος, "slaves," evidently the fate of some of them.

The Persian poet Firdausi, circa 1010, records many dragon-slayings in his *Shāhnameh*, the *Book of Kings*. Much more could be said here of Persian dragons, and of the evil eye—we are in the middle of harmel country, and never too far from the snapping and the faintly intoxicating burnt-barley smell of roasting esfand seeds. But our evil gaze now takes us down the ancient road from Susa to Babylon.

◆

Along the way (timewise), we find a Hittite seal, 3500 to 3900 years old, showing the Storm God killing a dragon with an axe. The dragon's name is Illuyankas, and there are two stories of his demise. In one, the serpent initially overcomes the Storm God. The Storm God finds a goddess, Inaras, to help him. Inaras employs the assistance of a mortal man, Hupasiyas, who agrees to help in exchange for being able to sleep with her. Inaras throws a big banquet, personally invites the dragon and his children, gets them drunk, and, violating all rules of hospitality, has Hupasiyas tie them up. Then the Storm God comes out and kills them.



HITTITE SEAL, CA. 2800 BCE

In the other version, the serpent overcomes the Storm God and takes his heart and his eyes. The Storm God, destitute, marries the daughter of a poor mortal and has a son. The son grows up and marries the daughter of the dragon. After some time, the Storm God talks his son into negotiating the return of his heart and his eyes with his father-in-law. The dragon gives the heart and eyes to the Storm God's son, who gives them back to his father. The Storm God immediately arms himself and dives into the ocean to kill the dragon. Outraged, the son declares that he will stand with his wife's people. The Storm God kills the dragon and then his son (and thereby put the "selfish gene" theory out-of-fashion for another four thousand years). Recitation of the myth was part of the annual *purulli* festival of the new year.

There was said to be another Hittite dragon named Hedommu, who fell in love with Ishtar.

In Babylon we may be approaching the proto-typical dragon myth in the *Enūma Eliš*, the hymn of creation. In a relatively small area around and between the lower Tigris and Euphrates rivers, about a hundred miles wide and a hundred and fifty miles long, and in just a few centuries, between 3500 and 3000 BCE, the "civilized state" emerged. Maybe it was a natural consequence of large numbers of people getting together to build irrigation canals, or maybe it was the trick of some sour god who was feeling slighted. However it occurred, which deserves more study, very quickly little clay and stone seals began proliferating to signify "I own this," followed by a class of professional priest-scribes who kept track of everything and managed state finance and large construction projects.

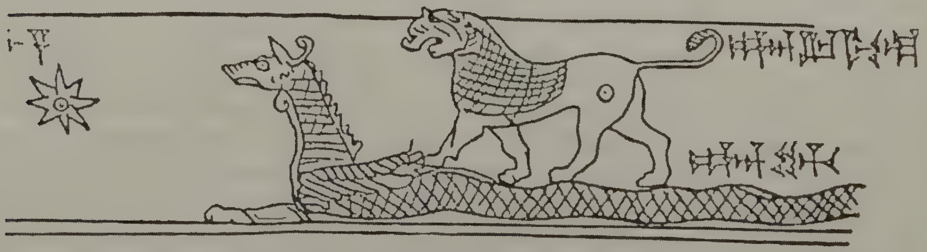
> *Organizing hundreds or thousands of people into a coordinated construction project is no small achievement, but if you can do it once, you can probably do it again. Let's call it the "Canal Gang." Then maybe someone got the idea that they could use the Canal Gang to build a community cultural center. And maybe a church—a big one—the power of the Canal Gang has its own intoxication. Then maybe there has been a problem with a large band of cattle thieves. Someone gets the idea, "Hey, let's get the Canal Gang together and go pay them a visit." Yeah man.*

Priests were followed by kings. Originally kings were simply men popularly chosen to act as temporary commanders-in-chief for military necessities. As "emergencies" proliferated, the kings began keeping standing armies (an armed police force), and collecting taxes to pay them. This led to a division between the "ins" and the "outs." The "ins" were those close to the king who received a share of the booty collected from the "outs," those who worked, mostly peasant farmers. The mercenary palace guard protected the property of the aristocracy and suppressed outbreaks of social unrest. Did I miss something? Well, yes. Writing, bronze weapons, geometry, large armies, and slavery. And state religion. Which is where, after that gross over-simplification, our tale proceeds.

> *The tomb of one queen of Ur, about 2500 BCE, astounded the modern world with its wealth of delicate jewelry, its harps, and the masses of sacrificed servants.*
>
> *—Chester G. Starr, A History of the Ancient World*

Imperial control of lower Mesopotamia shifted back and forth between Sumer and the Semitic-speaking Akkadians for about a thousand years. After about 2000 BCE there were no native speakers of Sumerian, but it endured as a liturgical language and the language of learning for another 1500 years, much as Latin did after the fall of Rome. Cuneiform was used to record not only Sumerian, but Akkadian, Hittite, Old Persian, and a number of other ancient languages—many state edicts exist in multiple translation. And the old Sumerian triad of gods, An, Enlil, and Enki, endured likewise. While the Sumerian deities were mainly associated with fertility and animal husbandry, the Akkadian deities were more astral: sun, moon, stars. Sumer-Akkad and the *Enūma Eliš* grew from the synthesis of the two cultures.

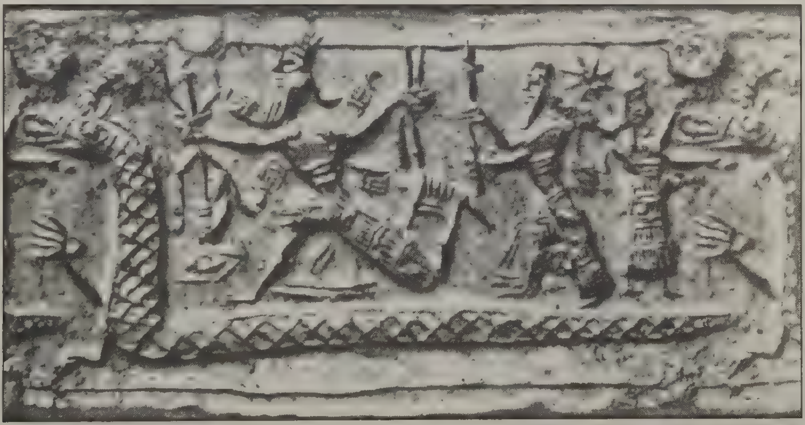
In the Beginning, or near to the Beginning, the mother of all the gods, a female dragon named Tiāmat (compare Akkadian *tamdu*, "sea," "ocean") encircled everything with her consort Apsu. Tiāmat and Apsu mingled their waters and engendered the sky god, Anu, along with numerous other progeny. Anu, in turn, engendered Ea, the god of earth and life often depicted with two streams of water running from his hands, and, like Varuṇa, riding a goat-fish. Ea is Akkadian for Enki, the Sumerian god of wisdom who dwells in the *Abzu*, a deep subterranean sweet-water ocean.



TIĀMAT SHOWN AS HYDRA, BABYLONIAN PERIOD

Apsu becomes disturbed by the noisy gamboling of all of his children. He complains to Tiāmat that he can't sleep or rest, and that he wants to destroy his creations. Tiāmat begs for patience, but Apsu is unmoved. Ea, who is clever, figures out what is about to happen and, using magical incantations, puts Apsu into a deep sleep, ties him up, kills him, and takes his brightness for himself, thus becoming lord of the deep. In those very deeps his wife Damkina gives birth to Marduk.

Ea's father, sky-god Anu, continues the struggle against his parents. Anu raises the winds and creates waves to trouble Tiāmat. By now Tiāmat has had enough and she tries to fight back—besides, her other children are chiding her for not standing by Apsu. Tiāmat creates eleven or twelve monsters and chooses Kingu, another of her progeny, for the inheritance (and her bed), and gives him the Tablets of Destiny, connected with the star Aldebaran. The Tablets of Destiny are the family records, the minutes of their meetings. Anu and Ea are cowed by Tiāmat's show of force, but Marduk steps forward to accept Tiāmat's challenge, as long as it is agreed that he will become the Supreme Commander.



MARDUK SLAYING TIĀMAT, BABYLONIAN

Marduk conjures up *Imhullu*, the atrocious wind, accepts a net from Anu, yokes four other winds named the Killer, the Pitiless, the Trampler, and Haste to his chariot and slays his dragonish grandmother in single gory combat, peeved that Tiāmat had made "that bungler" (Kingu) her husband. Marduk takes the Tablets of Destiny from Kingu for himself.

> *Then brave Marduk tightened the ropes of the prisoners. He turned back to where Tiāmat lay bound, he straddled the legs and smashed her skull (for the mace was merciless), he severed the arteries and the blood streamed down the north wind to the unknown ends of the world.*
>
> *—Tablet IV, tr. N. K. Sandars*

All the other gods laugh out loud at what has happened, then give Marduk presents. Marduk cuts Tiāmat's corpse in half, one half of which becomes the sky and the other half the earth. It is at this time that Marduk maps out the Zodiac along the path of Jupiter, his planet. Marduk then creates humans—meant to serve the gods—from the blood of Kingu, whom he sacrifices.

And Tiāmat's eyes became springs.

Scholars differ as to when the *Enūma Eliš* was written, some placing its composition in the middle of the second millennium, others placing it in the New Babylonian period, perhaps after Nebuchadnezzar recaptured the statue of Marduk from the Elamites, or even later, in the period of Babylon's decline. Marduk was originally a local god of the city of Babylon, and while he is mentioned at least as early as the Old Babylonian period, by Hammurabi, he had a minor status. For a thousand years, even while political control of the nation-state of Sumer-Akkad was centered in Babylon, religious authority was still centered in Nippur, around Anu and Enlil. The *Enūma Eliš* is a commemoration of the final concentration of total authority in Babylon and its god, Marduk. But if Marduk was a new actor in the story, his role as dragon slayer was there before him, and had been played by even older gods for at least two thousand years. An example are the hymns of *Lugal-e*, found in both Sumerian and Akkadian, where Ninurta receives the kingship from the father of the gods, Anu, in exchange for killing the dragon Asag.

Try to remember the good times:
the singers, the dancers,
the good times we had in Babylon.

That the evil eye, the deadly power of dryness and drought, is coextensive with the slaying of the dragon, is attested by another Sumerian text:

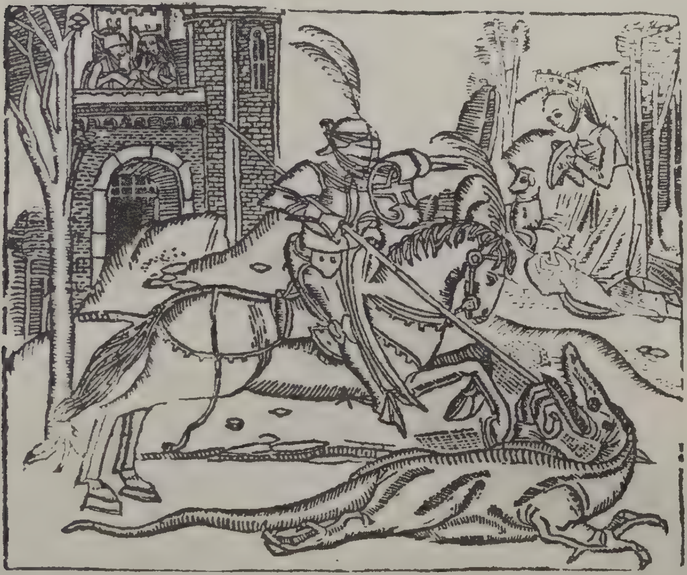
The eye ad-gir, the eye a man has. . . The eye afflicting man with evil, the ad-gir.
Unto heaven it approached and the storms sent no rain.

—Dundes

Lest we too quickly presume that dragon-slaying is a simple story of the (bad) (and blood-thirsty) patriarchs versus the (good) (and nurturing) matriarchs (wherein any reference to human sacrifice to the goddess-dragon is to be regarded as a patriarchal revisionist slur campaign), we should note that goddesses do appear among the dragon slayers from time to time, especially in the more archaic myths. Women do not seem to have an exalted, or even an equal, position in *either* ophiophobic *or* ophiophilic cultures. Still, it is worth noting that Marduk (as bad a boy as Ishtar a bad girl, and no romantic fool), after slaying the dragon, turns down the offer of the fertility goddess for a tryst, astutely pointing out the fate of her previous lovers, such as the shepherd-boy Tammuz, the grandson of the "Lord of Soothsaying by means of water."

DRAGON SLAYERS OF THE WORLD (A SAMPLING):

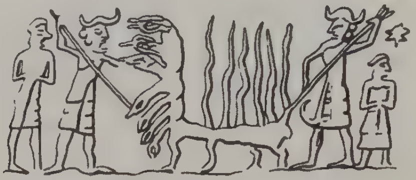
Marduk, Beowulf, Indra, Zeus, Baal, Daniel, Sigurd, Siegfried, Thor, Fergus, Vishnu, Perseus, Herakles, Gilgamesh, Thraētaona, Froach, Apollo, Tristan, Merlin, Set (Seth), Horus, Michael, George, Cuchulain, Athena, Ishtar, Cadmus, Anat, Yahweh.



ST. GEORGE OF THE GOLDEN LEGEND, DENMARK

Yahweh, also known as "God," slays the dragon Leviathan (the "coiled one") at the dawn of creation, as does his neighbor and cousin, Baal, in Ugarit. As the coiled one, Leviathan is also the binder, or the encompasser, like Varuṇa. Leviathan (לויתן, Liwyātān) occurs six times in the Bible, but is attested much earlier in an Ugaritic text (which was already old when the Hebrews were still in Egypt). Leviathan is associated with Yam, the coiled one, who is slain by Baal (or Anat).

Leviathan may have been one of the eleven or twelve horrible beasts called up by Tiāmat as part of her army. A picture of Leviathan (or another seven-headed dragon) being slain is depicted on seals from as early as the third millennium BCE in Mesopotamia.



SLAYING LEVIATHAN, SUMER, 2300 BCE

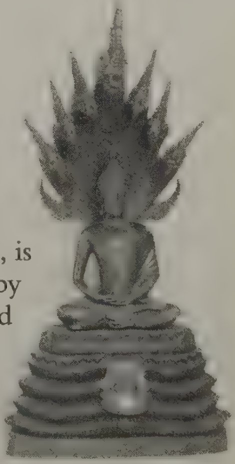
We should note here, by the way, that India found another way to deal with the seven-headed serpent—Krishna subdues Kaliya by dancing on its heads. And for the Buddha the seven-headed Mucilinda is an ally—the serpent wraps seven coils around the Buddha to protect him while he seeks enlightenment. The ophiophilic aspects of Sumerian culture—and there are certainly such traces, not only in some aspects of Ea, but also in depictions of goddesses holding giant serpents—were overwhelmed by the ophiophobic Akkadians. (Some linguists have proposed a common ancestry for Sumerian and Dravidian.)

Leviathan is invoked by Job when he curses the night he was born:

> *Let it be cursed by those whose spells bind the sea monster,*
> *who have the skill to tame Leviathan.*
>
> *—Job 3:8 REB*

Several other words are used for dragon or sea monster in the Old Testament, all of which are translated as *drakōn* in the Septuagint, including *tannin* and *nāhāš*.

Nachash is the serpent, the hiss. Tannin, or Tannim (תנין), is probably cognate with the Ugaritic sea-monstrer *tnn* slain by the goddess Anat—a very tough young female who refused to grow up properly. Tannin appears in the Old Testament in various guises. In the creation story, Tannin is created by God on the fifth day as just another creature—thought by some to be an effort by the Hebrew poets to distance and differentiate themselves from their Canaanite neighbors. At other places Tannin is associated with a crocodile, in a pejorative sense (despite the Hebrew's time in Egypt,

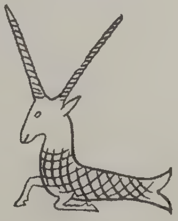


BUDDHA AND MUCILINDA

Hebrew mythology is basically Canaanite—they incorporated very little from the Egyptians—well, except perhaps monotheism. . . and a lot of Proverbs, and maybe the 104th Psalm). In the *Apocrypha*, Daniel slays a dragon, and the dragon reappears in the Apocalyptic literature, showing the influence of the Israelite's Persian liberators.

In Isaiah 27:1, Tannin is the enemy of God, to be slain, in parallel to Leviathan (*nâchâsh* also occurs in this verse). The continuity of the Mesopotamian dragon-slaying theme in the Hebrew tradition (and its similarity to the *R̥gVeda*) is evident from Psalm 74:

> *But thou, O God, thou king from of old,*
> *thou mighty conqueror all the world over,*
> *by thy power thou didst cleave the sea-monster in two*
> *and break the sea-serpent's heads above the waters;*
> *thou didst crush Leviathan's many heads*
> *and throw him to the sharks for food.*
> *Thou didst open channels for spring and torrent;*
> *thou didst dry up rivers never known to fail.*
>
> —*NEB*



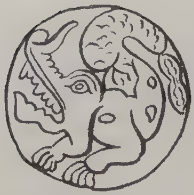
BABYLONIAN SEA-GOAT

Tiāmat is thought to be cognate with the Hebrew תהום, *t^ehôwm* ("surging abyss," "the Deep"). If so, she appears in the second verse of the first chapter of Genesis.

> *And the earth was without form, and void; and darkness was upon the face of the deep.*

From Cannan we can only move to Egypt, where the gods still preserve half of their archaic, animal forms. Egypt, like India, seems to be a crossover point of ophiophilic and ophiophobic traditions. The goddess Naunet is representative of primordial chaos and wears the head of a serpent, while her consort Nun has the head of a frog, but neither of them were considered malevolent entities to be killed. A ship-wrecked sailor is saved by a friendly sea serpent. Set (or Re) kills Apophis, the snake of death, but that's really a different story. The origins of the Egyptian myths are so archaic that they are, as is said, "lost in the sands of time" (Gurdjieff once boasted that he had seen a map of 'pre-sand Egypt'). As an Arab country, today, the belief in the evil eye is widespread—protection comes from the Eye of Horus.

The family drama of Osiris is complete with murder, but the role of the dragon is more equivocal. There are many versions of the battle between Set and Horus, and almost any point could be proved by choosing one or another of them—which, I suppose, is the whole point of polytheism. Here's one, quick and general: Set kills his brother Osiris out of envy, wife Isis brings him back to life. Son Horus tries to avenge his father, but loses one of his eyes to Set. Horus's vision is restored by gazelle milk, he renews the combat, and after between three and eighty tries

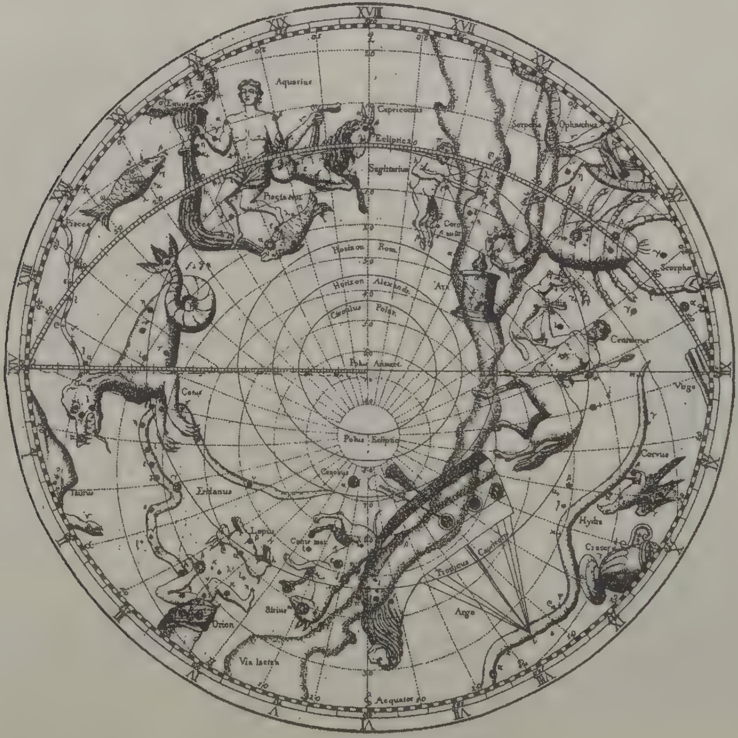


MAKARA,
BODHGAYA
CA. 70 BCE

succeeds in killing Set. Mother Isis keeps shifting her preference between Set and Horus. Horus cuts off her head and replaces it with the head of a cow. In some versions of the story Set takes the form of a hippopotamus, in others, Set is a serpent. According to Plutarch, Set assumes the form of a crocodile. The New English Bible translates the Behemoth of Job 40:15 as "crocodile."

Some believe that the Babylonian myth was built up out of Egyptian elements. It's difficult to say. Plutarch recognized the correspondence of Set to Typhon, the monster eventually (after several defeats) slain by Zeus. While there is a clear dragonish presence in Egypt (a dragon guarded the tombs at Thebes), the tracks drift into linguistic and historical obscurity, while the story written across the sky is all around us.

It is impossible to cross the night sky at any time of the year without finding dragon tracks. Our constellations and star names come to us through Arabian astronomers, who in turn were the receivers of Greek astronomy from Alexandria. The origins of the Greek constellations are partly in Babylonia (the Zodiac), partly from their own myths, and several from some other source that John H. Rogers (1998) dubs "the Navigators." Rogers thinks the most likely candidate for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Capricornus
Eclipticus
Sagittarius
Serpens
Ophiuchus
Pisces
Piscis Not
Corona austr.
Scorpius
Horizon Rom.
Horizon Alexandr.
Canopus Polar.
Ara
Lupus
Centaurus
Polus Antarct.
Virgo
Cetus
Polus Ecliptic.
Corvus
Canopus
Taurus
Eridanus
Hydra
Lepus
Canis maj.
Crater
Tropicus Capricorni
Sirius
Argo
Orion
Via lactea
Aequator

STARMAP, SOUTHERN SKY IN THE 1ST CENTURY, J.H.ROGERS the Navigators would be the Minoans, who took to the sea around 2800 BCE when Ophiuchus, Serpens, and Cetus would have marked the cardinal points. The Minoans, we should note, were an ophiophilic culture. Besides the zodiacal constellations, the Babylonians had another group of constellations connected with the agricultural year that Rogers calls "rustic."

In the northern sky, in the autumn, the constellations Perseus, Cassiopeia, Cepheus, Andromeda, and Pegasus—half of the celestial sphere—are all part of the same drama. The twisting stars of the dragon slayer Perseus hold the severed head of Medusa, marked by the star Algol. Every three days Algol dims from a bright magnitude of 2.3 to magnitude 3.5—like the dimmest of the six major stars in Cassiopeia—and then brightens again (it's an eclipsing variable). The Hebrews called Algol the "Star of Satan," or "Lilith." The Arabs called Algol the "Demon Star"—appropriate for Medusa's dragonish eye.

Cassiopeia, adjacent, is Andromeda's mother, who, according to Sophocles, boasted that she was more beautiful than the Nereids, for which impropriety Poseidon sent a female sea monster to ravage her country, "Ethiopia," (Kush). To propitiate the sea monster, Andromeda's father, Cepheus, chained his daughter, naked but for a few jewels, to a rock by the sea as a sacrifice. Andromeda was saved by Perseus, who slew the dragon (his second). Artists love to portray Andromeda naked—she's even naked in one edition of Abd al-Rahman al-Sufi's *Book of Fixed Stars*. I've always liked Andromeda because it contains "the farthest out thing" that one can see, as is said, with the unaided eye: M31, the Andromeda Galaxy—2.2 million light years away. Andromeda's head connects with Pegasus, the flying horse that was born from Medusa's blood.

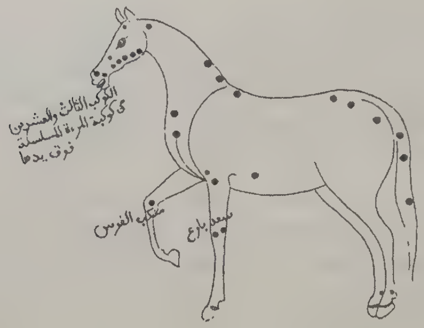
Dragon's preferred victims correspond to those most vulnerable to the evil eye—dragons eat children and they also eat cows. Andromeda is the perfect sacrifice for a dragon—she is young and beautiful. The ugly and deformed are as exempt from the evil eye as the powerful and beautiful are vulnerable.

> *Thus kings of old*
> *kept dwarves and fools.*
> *Thus rulers always keep a fool close by.*

Robert Graves, in *The Greek Myths*, describes a Syrian icon that could offer a different interpretation of the whole tableau. The icon depicts Marduk, or his predecessor Bel, slaying the sea monster Tiāmat from the back of a white horse.

◆

> *In the same icon, the jeweled, naked Andromeda, standing chained to a rock, is Aphrodite, or Ishtar, or Astarte, the lecherous Sea-goddess. . . but she is not waiting to be rescued; Marduk has bound her there himself.*
>
> —*Graves, The Greek Myths, §73.7*



HORSE, AL SUFI

However, the Babylonian constellation of the Horse does not completely coincide with the Greek Pegasus, nor does it have wings. In the tenth century, al-Sufi depicts the Horse as beginning with β-Pegasi and includes part of Lacerta—though at least al-Sufi's horse isn't upside down. (Jewish legend associates the constellation with the Horse of Nimrod.) Also, according to al-Sufi, the constellation of Anunitum, the Babylonian goddess of childbirth, while encompassing the northern stars of Andromeda, also includes the Northern Fish (of Pisces). Graves connects the slaying of Tiāmat to Jehovah hacking up Rahab (Isaiah 51:9).

The Sumerians called the constellation of Perseus "The Old Man" (*SHU.GI*, or *Enmeshara*), a mysterious but kindly gray-bearded creator-figure who was the ancestor of Enlil. As the grey-bearded "Ancient of Days," the Old Man is also the Canaanite El, and as close as we will come to an asterism for "God," at least before "Good-Natured" El was gradually merged with the "Jealous God" Yahweh in the Old Testament. Perseus is also identified with Mithras, the bull slayer, whose birthday (and much else) was appropriated by the Christians for their Savior.

The great square of Pegasus was known to the Babylonians as "the Field," or the "Seat of Ea." Ea, part of the earliest known Sumerian pantheon, is a god of springs and wells, and was later equated with Enki, the god of wisdom and skills. Enki's wife, Nin-gur-sag, once cursed Enki by looking upon him "without the look of life"—our first recorded instance of the evil eye—because he had eaten eight plants that she had brought forth in the paradisiacal garden. Enki was supposed to be guarding and endowing the plants with powers, not eating them. The curse caused eight organs in his body to sicken and weaken. Finally Nin-gur-sag relented, removed her curse, and healed Enki by placing him by her vulva and creating eight healing goddesses. (The goddess created to heal Enki's rib was *Nin-ti*, "Lady of the rib." *Ti* also means "to make live" in Sumerian, so the "Lady of the Rib" was also the "Lady who makes Live," or, in Hebrew, *Eve*.) The Field was also called the Garden of Tiāmat, the celestial Eden claimed by Marduk for himself after his victory.

The summer sky is dominated by Hercules, slayer of more dragons than any other Greek hero. The commonest depictions of the constellation show Hercules holding in his right hand the club that he used to burn the necks of the nine-headed serpent of Lerna so that they would not re-grow. His left hand is often shown grasping a branch of the tree which bore the golden apples and was guarded by a dragon, hence Draco's position just north, which, in this interpretation, would be the dragon Ladon. Some stories equate each of Hercules' twelve labors with the signs of the zodiac. Hyginus, in *Poetic Astronomy*, lists a number of other identifications for this constellation, including Ixion, Ceteus, Thamyris, and Theseus.

Phoenician tradition, according to Theony Condos (1997), associates Hercules and Draco with the Sun God (which would be Marduk or Bel) slaying a dragon. However, Condos does not make clear her source for this assertion (it may be Thomas Brown, 1900), and the tradition may be post-Ptolemaic.

Rogers points out that Hercules would have been right side up in 2800 BCE. Greek and Roman astronomers almost always referred to the constellation not as Hercules, but as *Engonasin*, "the kneeling one," Aratus stating that "no one knows his name nor the cause of his toil."

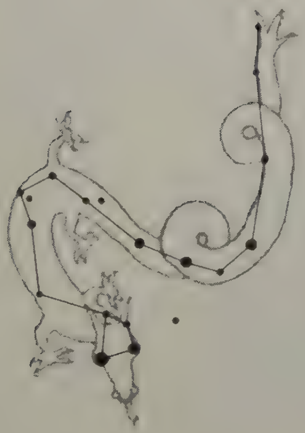
The Babylonians called the northern stars of Hercules the "Great Temple of Enlil," though evidently (according to the chart in Rogers 1998) not including the star ι–Herculis, which I've always thought should be part of Draco anyway. Enlil is the storm god and creator/king of heaven/king of earth/king of underworld/king of all lands who is also called Bel, or Illilos. Enlil once had to serve time in the underworld for raping his daughter, who, impregnated, later gave birth to the moon god *Sin.*

> *In Indo-European,*
> *SIN IS (YES)*
> *That's the ESSENCE.*
>
> *Which is why, in this Vale of Tears, we do our best not to make things worse.*

The lower parts of Hercules are the Babylonian constellation of the Dog, Sumerian UR.KU. On the Middle Babylonian star tablets known as the *MUL.APIN*, 1100-700 BCE, the constellation of Enlil, who decrees the fate of the land, is SHU.PA, Boötes.

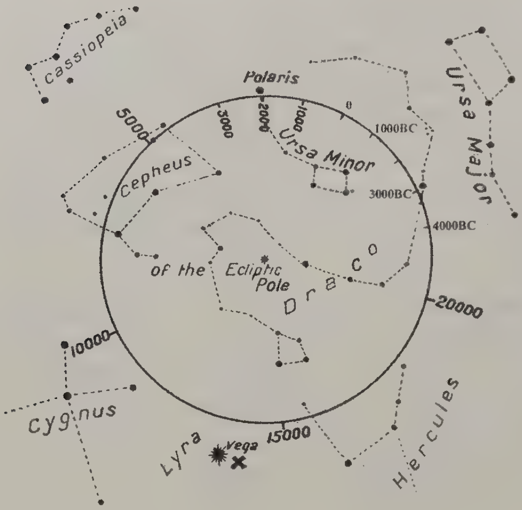
Draco, the Dragon, was not a Mesopotamian constellation. In fact, the Babylonians don't have any dragons in the stars (we'll discuss Hydra below)—not surprising considering the prominent presence given to the dragon's natural enemies. The Arabs called Draco *al-Tinnin*, but that was a translation of Ptolemy's *drakonis*, not an indigenous Semitic tradition.

The Babylonian circumpolar constellations were the Wagon (the four box stars of Ursa Major), the Wagon of Heaven (Ursa Minor), also associated with Damkina, the "Lady of the Earth" married to Ea, and the Hitched Yoke, being most of Draco. The head of Draco was a pig, or Damu, the god of healing. The star Thuban, α-draconis, in the tail of Draco, may have represented Anu.



DRACO

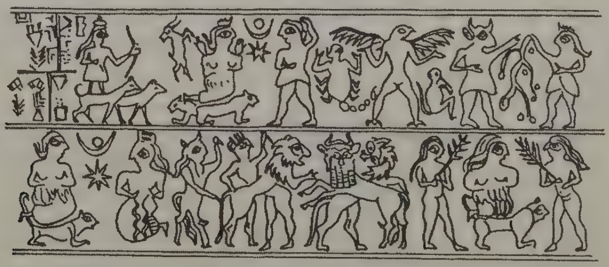
Five thousand years ago Thuban was much brighter than it is today—it was the brightest star in Draco—and it marked the north celestial pole, the way Polaris has for the last thousand years. While the North Pole would have no usefulness to a rustic agricultural calendar, which was marked by the heliacal rising of certain constellations to indicate the times for plantings and harvesting, it would have been very important



to the sea-going (and ophiophilic) Minoans. Rogers (1998) includes Draco as one of the contributions of the Navigators, along with the other constellations that marked the celestial coordinates of 2800 BCE, Ophiuchus and Cetus.

The (unmoving) north ecliptic pole, around which the north celestial pole precesses, is right in the middle of Draco, on a line between Draco's head and Polaris. According to Allen (1963 [1899]), who references Strabo, Draco originally had wings, the stars being given over to Ursa Minor when Thales adopted the Little Bear from the Phoenicians around 600 BCE. Draco has been called the Serpent of Eden, the Monster "killt" by Cadmus, and the man-eating Persian *Azhdahā*, but all of these must be later appellations.

Neither Ophiuchus nor Cetus were Mesopotamian constellations. It is interesting that they both have dragonish aspects. Cetus is in the autumn sky, though far to the south. Hyginus identified Cetus with the sea monster sent by Neptune to devour Andromeda, and as such it is almost always represented. It survives in our ophiophobic skies because of its usefulness to mariners. Rogers states that in 2800 BCE Cetus pointed to the spring equinox in Taurus. Likewise Ophiuchus, the "serpent-bearer," is a navigational marker. In 2800 BCE the tail of Serpens ran along the celestial equator, while the head of the serpent, Serpens Caput, pointed due north. Julius Staal, in *Patterns in the Sky*, states that "in an older Babylonian view" Ophiuchus/Serpens represented Tiāmat, but it is not listed in the *MUL.APIN*. Similar claims are sometimes made for Hydra, which in the *MUL.APIN* is listed as the Snake, Ningizzida, the Lord of the Underworld. Hydra is not really a dragon, but the great snake that guards the underworld. Below Hydra it's all water. In 2800 BCE Hydra coincided with the celestial equator, stretching a full ninety degree arc of the sky. The Greeks associated Ophiuchus with Asclepius, the master healer, who was exiled to the sky for for trying to bring Orion back to life with a drop of Medusa's blood.



ELAMITE SEAL WITH CONSTELLATIONS, CA. 2500 BCE

The zodiacal constellations arose in Mesopotamia from what we could call the theophanic tradition. The first phase of development, from ca. 3200 to 2100 BCE, is preserved in pictographic representations on seals and jars. During the Kassite Dynasty (~1350-1000 BCE) different pictographic representations were carved into numerous "boundary stones," property markers inscribed with representations of the gods as witnesses.

Three of the more common animals depicted, the bull, the lion, and the scorpion, were often shown decorated with stars, and correspond to the oldest Mesopotamian constellations, Taurus, Leo, and Scorpius, which, besides being striking and prominent asterisms, marked the cardinal points in that era. The common motif of a lion attacking a bull could have represented the time for spring planting. At sunset, Leo would have been at zenith while the Pleiades in Taurus would have been disappearing into the sun. Lions, on seals and boundary stones, were often shown riding on the back of a huge serpent, as Leo walks above the long constellation of Hydra. The rustic constellation of the Plough (our Triangulum plus γ-Andromedae) would have been at its helical rising (the date when a star can first be seen on the eastern horizon, just at dawn). The helical rising of Antares in Scorpius would have coincided with the autumnal equinox. Scorpius was associated with ISHHARA, "Goddess of All Inhabited Regions."

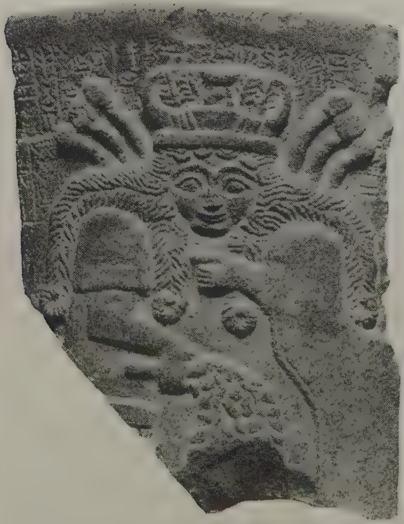
Sometime before 1100 BCE the Babylonians developed the *Three Stars Each* system, in which the twelve lunar stations (originally eighteen) in the sky were each marked by three named stars. This is the oldest Zodiac. The tablets include information about the helical rising of a number of constellations important for the agricultural year. The sky was divided into three large areas: the northern part of the sky was called the Way of Enlil, a number of whose stars we have already visited. The equatorial stars were called the Way of Anu, and the southern stars were the Way of Ea.

Jupiter was used to mark the ecliptic, and Jupiter was Marduk. On boundary stones Marduk is depicted as a large vertical spade on top of the dragon he slew. Bright Sirius is the Arrow of Ninurta, who vanquished the dragonish demon Asag. Ninurta's Bow is the rest of Canis Major. The target of the arrow is Orion. Orion, in the winter sky, is one of the most widely known and ancient asterisms. Surprisingly, or perhaps not, Orion is not a dragon-killer—at least not north of Egypt, where the stars are associated with Osiris. The Babylonians called Orion the Walking Bird, or Papsukal, the True Shepherd of Heaven, the messenger of Anu and Ishtar, but the Akkadian name Shitaddalu means the "wounded one." Sirius is also the Mazdean demon-slayer Tištrya, who slew the Apaoša, the "Demon of Drought," who was holding back the Waters and threatening to ruin all Creation (Eliade, 1978). Haoma assists as a rain-maker, in this story (*Yašt 8*).

Besides Marduk/Jupiter, three other stars are prominent on Kassite boundary stones: the Sun, the Moon, and Venus. The Sun was Shamash, who was not particularly important to early Sumerian astronomy (hard to look at, hides the rest of the stars). The Moon was Nanna, or Sin. Sin was the father of the morning and evening star Venus, Ishtar, or, in Sumerian, Inanna. Inanna was the second being to be struck by the evil eye.

Inanna, for reasons of her own, decided to go down to visit her elder sister, Ereshkigal, in the Underworld. Ereshkigal's servants removed one after another of Inanna's jewels and queenly robes until, when she was finally brought before her sister, she was completely naked. The judges of the underworld, who crowded around her, turned thumbs down and Ereshkigal, after casting an evil eye upon her, hung her on a meat hook like "rotting carrion." She was rescued through the efforts of Enki, after both Enlil and her father Nanna refused to help. However, there was a condition to her being allowed to leave the place from whence none return—she had to supply a replacement. After telling the agents of death to pass over her best friend, and her two sons, she saw her husband Dumuzi sitting on her throne and playing a flute. Dumuzi then became the third victim of the evil eye, when Inanna looked upon him "with the glance of death." In choosing Dumuzi as her consort instead of his rival who worked with a hoe, Inanna was favoring a shepherd over a farmer, as did Jehovah two thousand years later—in both cases a source of bad luck for the shepherd. The contention between the pastoralist and the agriculturalist fulfills the evil eye conditions of Garrison and Arensberg, cited earlier.

We might ask what the first three casters of the evil eye—Ningikuga (Nin-gur-sag), Ereshkigal, and Inanna—had in common? Mostly, they are all female descendants of Nammu, the chthonic creator and goddess of the watery deep—certainly the Tiāmat of the later Akkadian *Enuma Eliš*. Of course, who wasn't? But still.



INANNA, CA. 2400 BCE

Inanna: Ishtar, Astarte. Goddess of love and goddess of war. Nin.ana.ak: Lady of the Date Clusters. St. John the Divine knew she was a dragon.

"It was either you or me, baby."

Which, actually, wasn't true at all—there were lots of others she could have sacrificed. She DID promise to cry at Dumuzi's funeral.

Bad girl Inanna. For a young woman of good, if dysfunctional family, down slumming it in the seamy cities of Sumer, hanging out with toughs and beer-drinking rowdies, she did rather well for herself to have earned both the titles of Queen of Heaven and Whore of Babylon. No wonder the poets loved her! Everyone loved her. Aphrodite could be the Sacred Slut and be welcome at the best of tables, but "Queen of Heaven" was out of the question. Inanna was in her own class, and she would have laughed derisively at our current notions of the "good and wholesome" goddess—as she loosed her army of murderous plunderers.

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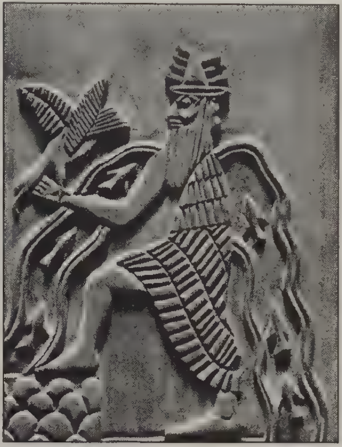


ENKI, WITH STREAMS AND FISH

There are lots of good stories about these stars, but for our purposes—tracking dragons—there are only two more to examine: Aquarius and Capricornus. Both of them are in the Way of Ea, are identified with Ea himself, and are surrounded by watery friends. Ea, beneficent god of waters and wisdom, Ea, who saved mankind from destruction in the Deluge, Ea, who sees all, the Oracular, the Lord of the Sacred Eye, Ea, the Great One, who alone of the gods sent help to Inanna in the Underworld, still anchors the southern sky—two streams of water flowing from his arms or shoulders, fish sometimes swimming in them (Pisces Austrinus was included in Aquarius). Aquarius is the fourth of the ancient cardinal points, marking the winter solstice, 3000 BCE.

Aquarius is the dragon's spring, the waters that the dragon either guards or blocks up. Right beside Aquarius is Capricornus, the goat-fish, also called Ea, but who, as we have seen, could as correctly be called Varuṇa—or Vr̥tra, or Ahi, or Aži. It left its signet in stone and clay for five thousand years, from the Mediterranean Sea to the Ganges River.

As Ea's functions more and more began to be taken over by Marduk, the dragon slayer (as Varuṇa's functions began to be taken over more and more by Indra . . .), Ea became a trickster, as was Vr̥tra. Sanskrit *r̥ta*, "truth" or "order," Varuṇa's particular care, is like the Sumerian *me* that is dispensed by Ea, the harmony and order that comes from the implicit power of things. In the turnings of the worm, or the watery motion of the serpent, the mother of order and virtue may not be different from "chaos"—Nammu, or Tiāmat. Perhaps Ea's best trick was hiding a dragon.

Nice theory, but what about China? They don't have the evil eye.

The Chinese didn't kill their dragons. They're still alive. And the Chinese constellation of the Dragon stretches halfway across the sky, from Sagittarius to Spica and Arcturus.

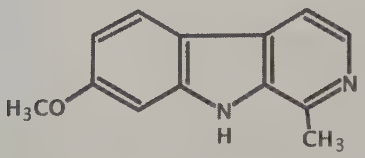
On the other hand, of course, the whole myth of the dragon slayer, with its myriad descendants, might simply be the result of a completely insignificant power struggle between two wealthy and clearly unscrupulous families that happened to be immortalized by some boot-licking poet trying to cop a free dinner.

One need not believe in the evil eye to be interested in that which can break a spell. Enchantment, alas, is the mark of the World.

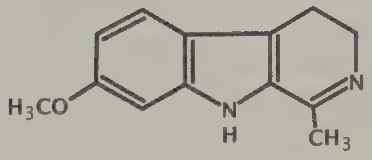
◆

Chemistry, Pharmacology

The seeds contain the β-carbolines harmaline and harmine, in higher concentrations than in *Banisteriopsis caapi*.



harmine



harmaline

The β-carbolines harmine and harmaline are monoamine oxidase inhibitors, or MAOIs. To be specific, harmine (and harmaline) is a reversible MAO type A inhibitor, or MAOI-A.

Loosely, Type A MAOIs, such as moclobemide, primarily inhibit the metabolism of tryptamines, while type B MAOIs, such as deprenyl, mainly affect phenethylamines. In vivo, there is a lot of crossover. "Reversible" means that the inhibition is temporary, brought about through competition at the binding site. Most MAOIs that are used as pharmaceutical anti-depressants are "permanent"—they work by destroying the docking site, and as such are much more dangerous.

Certain brave (or reckless) researchers who have experimented with irreversible MAOIs and psychoactive tryptamines report long-lasting flashbacks triggered by darkness weeks, even months, after the initial series of experiments.

> *Is it a spiritual lust? Or some deep longing for oblivion? Or like those old DMT cowboys, swaggering down the street with their record doses stuffed in the hatbands of their Stetsons?*

Harmine and harmaline are two of the active alkaloids in the ayahuasca vine, *Banisteriopsis caapi*. Rafael Zerda-Bayón, who first isolated the alkaloids from ayahuasca in 1905, named them telepathine, a testament to the powers of the jungle brew. The *Merck Index* inexactly labels both harmine and harmaline "CNS stimulants," meaning little more than that they act on the central nervous system. James Duke loosely classes *Peganum harmala* as a "narcotic hallucinogen." However, it is the efficacy of the harmel alkaloids as monoamine-oxidase inhibitors, that is, their ability to potentiate tryptamines and phenethylamines, that has tended to overshadow all of their other properties.

N,N-Dimethyltryptamine (DMT) is the most spectacular example of this effect. Shulgin (1997) reports that 350 mg of oral DMT is without effect. However, in combination with an appropriate dose of an MAOI, such as harmine or harmaline, even 50 mg of DMT can induce extraordinary and vividly colorful visions, as will be discussed in some of the following chapters.

Jonathan Ott (1994) reports that, in combination with 150 mg of harmine, 100 mg of mescaline hydrochloride produced a "pronounced threshold effect," whereas 200 to 300 mg of mescaline HCl would be required for such effects without an MAOI. Similarly, it is widely reported that harmel seeds potentiate the effects of psilocybin-containing mushrooms—roughly halving the required dosage—though the pharmacology involved is not well understood. Many experimenters have found beneficial effects from harmel even when combined with substances for which, pharmacologically, there should be no MAOI inter action at all, such as *Salvia divinorum* and *Amanita muscaria.*

> *Go figure.*
>
> *Some of these combinations are dangerous, particularly combining harmel (or any other MAOI) with amphetamines or amphetamine-like compounds. The sympathomimetic effects of such compounds, with their usual metabolic degradation inhibited, could be unpleasant or life-threatening. Nonetheless, some have combined MDMA with harmel, reporting enhanced and longer-lasting effects. Certainly, the dosage should be reduced. Small quantities of khat, Catha edulis, along with harmel, are not at all unpleasant.*

However, the last such combination that I would ever consider trying personally, harmel and ephedra, may have been employed by the ancient haoma-drinkers (Flattery, 2004). This mixture is unattested as such, but they were both around, both are still present in the haoma ceremony, and *somebody* must have tried them together. I would want to have a beta-blocker on hand. But then, I don't care much for ephedra, particularly the sympathomimetic effects. Some do. And *there*, for sure, is a drug to make a man draw his sword and slay a bunch of enemies!

The first studies of harmine and harmaline in a therapeutic context were carried out by Claudio Naranjo in the mid-1960s. Naranjo administered harmaline to a number of his patients, sometimes intravenously.

> *The effects of harmaline in the dosage range of 4 to 5 mg per kilogram of body weight by mouth (or a total dose of 70 to 100 mg intravenously) are a state of physical relaxation, a tendency to withdraw from the environment, keeping eyes closed and wanting noises and sounds to be kept to a minimum, a certain numbness in the extremities, and above all, very vivid visual images, which may take the form of meaningful dreamlike sequences. In addition to this, about 50 percent of the subjects experience nausea or vomiting at some point in the session. On account of the symptoms described, it follows that the ideal setting for the use of this drug is a comfortable couch in a quiet, dark environment.*
>
> *—Naranjo, 1973*

Naranjo noted the similarity in the visions of his Chilean patients and the recorded imagery of ayahuasceros—serpents, crocodiles, tigers, jaguars—even though he had not told his patients that the drug they were taking was in any way connected to the Amazon.

Naranjo found harmaline to be stronger and more visionary than harmine, a difference now generally accepted in psychedelic folklore. He also found that harmaline could be therapeutically effective quite apart from the actual interaction between the patient and the therapist during the session. As we would say, harmaline is itself a medicine.

> *Drinking harmel tea makes you feel well.*
>
> *—Dannaway, 2005*

Naranjo noticed that some of his patients experienced no psychological effects from harmaline, but only unpleasant physical reactions such as malaise, somnolence, and vomiting. Naranjo thought that such individuals were perhaps "ill-at-ease in their animal level of existence." In other traditions, however, with longer experience, purging is recognized as cleansing, as cathartic.

> *For keeping off the evil eye, the Big Evil Eye, we could call vomiting The Big Spit.*

Following the lead of generations of native ayahuasceros, Naranjo soon switched his studies to combinations of harmaline with drugs more properly of the phantastica. In the case of the ayahuasceros, the commonest admixture were plants containing DMT. Naranjo favored MDA.

Effects Harmine solutions are fluorescent and glow under black light, a property also shared by harmel vomit. Bathing one's body with a Syrian rue solution can be pretty spectacular at a place like Burning Man.

Poesis The easiest way to take harmel is to grind up three to five grams of seeds in a coffee grinder, put the powder in gel caps, and let your stomach extract the alkaloids. If you dislike being dyed yellow on the inside, it is easy to extract the alkaloids. The following method, modified from Hafenfratz, produces crystals of high purity.

Grind 100 grams of esfand seeds. A coffee grinder is good for this job. Soak the seeds for several days in 300 ml of 3% acetic acid. A little arithmetic will tell you that 180 ml of white vinegar, which is 5% acetic, diluted with 120 ml distilled water gives you what you need. Squeeze out the seeds, and extract the mass again with another

100 ml of 3% acetic. A potato ricer with a strip of cheese cloth is effective. Combine the two extracts and let them settle for 24 or 48 hours. Decant off as much of the clear solution as you can—it helps immensely with the filtering. If you don't have a Büchner funnel, a filter flask, and vacuum, the procedure will be a little slower—try to do as much as you can with decanting. The more solid matter that can be removed at this stage, the easier will be the subsequent precipitations. I filter it twice, about a hundred ml at a time, changing the filter papers when they clog.

Heat the filtered solution to near boiling, and stir in 90 grams of NaCl (salt). Don't use iodized salt. When the salt is dissolved, let the solution cool slowly—

finish with 24 hours in the refrigerator. Both the harmine and the harmaline will precipitate. Filter the precipitate and discard the filtrate.

Redissolve the precipitate in 150 ml of hot water and add another 25 grams of salt. Stir to dissolve the salt and let the solution cool as before, and filter out the crystals. Repeat this step once or twice more to get long, clean, yellowish crystals. Sometimes there is a little insoluble gunk that filters with the crystals. It can be removed by filtering the hot harmel solution before adding the salt.

Average yields are around 3%. Dr. Alexander Shulgin kindly submitted one of my samples for analysis by GCMS, and it proved to be of high purity—(there was no viscine). The ratio of harmine to harmaline was about 2:1.

Hafenfratz has instructions for separating the harmine and harmaline, if you can't resist the lure of chemistry.

Matters of State and Liberty Neither harmine nor harmaline are controlled substances in the United States. The Canadians place them in their "Schedule III," the Australians in "Schedule I."

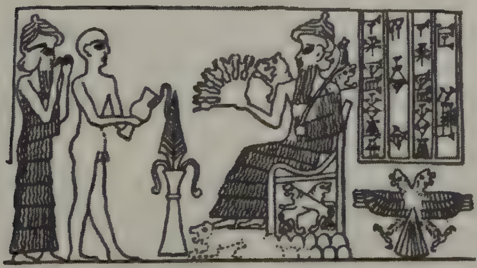
The Plant

O Esfand of the mountain top.
O Esfand of the mountain waist.
O Esfand of the mountain base.
O Esfand, you who know,
By the grace of Solomon the Prophet
Turn away the evil eye.

—Lorimer, (1977:65) in Flattery and Schwartz

Class Oneirophoria. Dream-bearing. In our inexact Mandala, it would go towards the center, sharing a little of each of the five classes, though closest to euphorica, or maybe to the rhapsodic line. The "King of Medicines."

The Ally Gudea, a Sumerian king of Lagash, dreamt that he should build a temple for Ningirsu. He prayed and performed rites for several days before the goddess Gatumdag, who granted him the location and the details for the design in a following dream. Alexander brought Aristander, his dream-interpreter, along with him on his expedition to the East. Caesar dreamt he slept with his mother, the dream telling him that the road to Rome lay open.



A TEMPLE FOR NINGIRSU, SUMERIA

Some dreams are ignored, usually with peril. The ancients recognized three categories of dream—those ordinary dreams that are overflow from the events of the day; then deep dreams, strong and portentous, revealing answers or clarifying practical or spiritual dilemmas—Mendeleev saw the periodic table, Descartes was visited by an angel who gave him the keys to mathematics. Then there are "true" dreams, dreams from the gods, as when the Prophet was given the Way of Submission.

Mohammed listened to the dreams of his followers every morning, interpreting them, and sharing his own dreams with them.

I know a cat who dreamt.

Some say the world is a dream. Chuang Tzu dreamt that he was a butterfly, but on awakening wondered if he were a butterfly dreaming a man. Joseph interpreted the dreams of the Pharaoh. Augustus passed a decree that any dream involving the Empire must be spoken aloud in the market.

Some get nothing from dreams, and believe they are all mental garbage. The cat dreamt that once dreams had been exiled, that there would thenceforth be no more dreaming, that cats would never again have their eyes glaze in fleeting confusion as they awoke from their whisker-twitching sleep. The dreams went to live in a land of high boxes, a huge warehouse labeled with bold black glyphs where no people lived and there were no plants. It is said to be good luck to dream of a plant.

DREAMFLOATER, CHINA

Freud dreamt that he loved his mother. Jung dreamt that a great cross divided the Cosmos into quadrants. Marx dreamt that Injustice could be righted by stealing back what had been stolen. Jesus dreamt of eating figs.

The Prophet's dream practice was maintained by the Sufis, that while prophecy had been sealed, dreams, being only 1/46th part prophecy, were still a gate for revelation.

Drinking harmel tea makes you feel well.

I know a cat that dreamt. A lot of dream researchers end up believing in telepathy—that images can be passed to dreamers, or that, with practice, one can meet another dreamer in a dream.

A Buddhist Arhat mastered a whole sutra in a dream.

Some live by dreams, or get confused crossing in or out, not sure which memory goes with which world-thread. Scientists are finding that dreams assist learning—moving and cataloging palettes of data between the Short Term Shelves and the Long Term Archives. Something about indexing.

There's a lot of cultural specificity to dreams, and there are gender and age differences to lists of quantified dream content. Some people don't dream in color. Helen Keller did, and had dreams of spectacular colorful sunsets.

Some depend on dreams. Handel heard the conclusion for The Messiah in a dream. Stevenson got so many nightly updates from his dreams that he wondered if he were really a writer at all. The Messenger of God advised lying

GROUND STATE TRAINING

By *ground state* we do not mean the ordinary consciousness, nor the way people will say "I'm back to ground state"—that consciousness is just another part of the dream. Ordinary consciousness only seems like the ground state because it is so familiar. And since we communicate with others—we work, eat, ride in subways, and so forth— we assume, one, that we and everyone else are in the same state of consciousness, and, two, that it is some basic, normal, and fundamental condition. While ordinary consciousness, loosely, might legitimately be called "normal," in no way is normal consciousness either basic or fundamental.

> *You're dreaming again. Wake up.*

By ground state, what we mean, on the poison path, is the part that IS fundamental—perhaps we could call it "fundamental mind." Who wouldn't like to know their own fundamental mind? Who wouldn't like to know, intimately, the part that is not mad, the part that is not boorish ego, the part that is not fearful or terrified?

The ground state is serene—what, after all, could perturb it? We say, "I feel grounded" when we are sure of ourselves, or when we have that feeling of solidity—that we are in a state where others' words won't lead us astray, where decisions and like situations won't confuse us. Sometimes we say, "I feel I'm in touch with myself." That is, you know what you feel, and you feel it. Ground state is not at all the same thing as "I," in the sense that "I am so-and-so," that so-and-so likes chocolate but not vanilla, so-and-so likes to wear brown but not green, or so-and-so can dance but not sing. The so-and-so world of ordinary consciousness is filled with grasping: I want that, I'll win this round, I own that, those people frighten me, that's good, that's bad.

Fundamental consciousness, or ground state, is not really different from the grass growing in the meadow, or the birds nesting in the eaves of the barn. It's here all the time, and if it's not the reason many of us started on the path in the first place, hints of the ground state that have been revealed by our poisonous tools have urged us to go further.

> *In the first place, there must be a keen and sincere desire to seek the Way. For example, someone who wishes to steal a precious jewel, to attack a formidable enemy, or to make the acquaintance of a beautiful woman must, at all times, watch intently for the opportunity, adjusting to changing events and shifting circumstances.*
>
> *—Dōgen, Shōbōgenzō, in Foster*

Ground state training is about discipline and attention. This is a skill we share with hunters—like cats, or maybe frogs. It is simply the power to focus on something for as long as you wish, without getting lost in internal dialog or fantasy. What could be simpler, more useful, or more fundamental? In ancient times the skill of attention was used to master swordsmanship, or archery, or painting. This is still true today.

Ground state training is not about trying to be "high, naturally," it's just about sitting, or walking, or lying down, about just doing that.

> *The real way circulates everywhere; how could it require practice or enlightenment? The essential teaching is fully available; how could effort be necessary? Furthermore the entire mirror is free of dust; why take steps to polish it? Nothing is separate from this very place; why journey away?*
>
> *And yet, if you miss the mark even by a strand of hair, you are as distant as heaven from earth. If the slightest discrimination occurs, you will be lost in confusion. You could be proud of your understanding and have abundant realization, or acquire outstanding wisdom and attain the way by clarifying the mind. Still, if you are wandering about in your head, you may miss the vital path of letting your body leap.*
>
> *—Dōgen, Recommending Zazen to All People, 1227, in Tanahashi*

Expertise in this practice was formalized as a system of yogic training in the Indus Valley at least 4,000 years ago. A steatite seal from Mohenjo-Daro, dated 2000 BCE, depicts a cross-legged yogi, wearing horns and surrounded by animals, hinting at shamanic hunting practices of Paleolithic and Neolithic cultures.

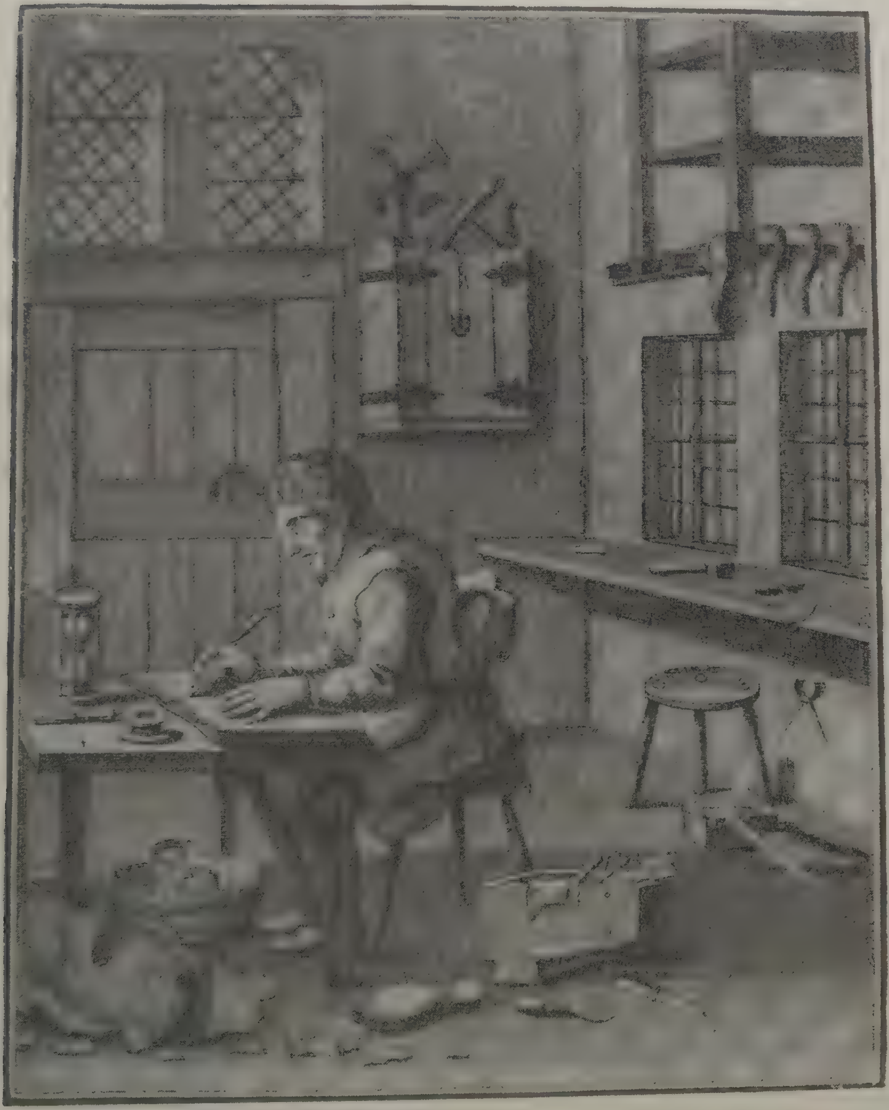
> *So much of hunting is patience.*

Yogic techniques developed to include a broad array of practices, from the subtle breath control of the pranayana schools to the bhaktic ganja smoking of the saddhus, from the alchemical energy transmutations of the sexual tantras to the bare-bones, stripped-down mindfulness practice of the Buddhists. Along with the Buddhists, Hindus, and Taoists, the Sufis and the other monotheists have all developed spiritual practices. For the poison path, the Shivaite lineage (which, ultimately, includes Zen) has a particular appeal. For one, we find Shiva adorned with a *Datura* flower, hinting at his archaic familiarity with plant poisons. Further, his ancient consort, the Shakti, was the Great Goddess herself, the Mistress of Wild Things. The practices of the Neolithic yogis, the "Forest Dwellers," out of which came both the Upanishads and Buddhism, echo the vision quest of indigenous peoples of both North and South America. In the forest they learned from the plants and they ate them, sometimes to the exclusion of meat.

In the West, along with his panther, Shiva joined with the tambourine women, the dancers, and was called Dionysus.

Grant us good luck, Eiraphiotes, maddener of women;
we singers salute you at the beginning of our songs,
and at the end. Anyone who forgets you
forgets his songs also. Farewell, Dionysus Eiraphiotes,
and your mother Semele, who is called Thyone.

—Homeric Hymn to Dionysus



BOEHME AT HIS WORKBENCH, EARLY DUTCH ENGRAVING

Jacob Boehme, the cobbler, called the ground state "the Unground" (*Ungrund*), about as precise that way as one can get with a word. For Boehme, the world is a glyph, a signature—the invisible is discerned through the visible.

> *Thus we recognize the eternal Unground out of Nature to be like a mirror. For it is like an eye which sees, and yet conducts nothing in the seeing wherewith it sees; for seeing is without essence, although it is generated from essence, viz. from the essential life.*
>
> *—Jacob Boehme, Six Theosophic Points*

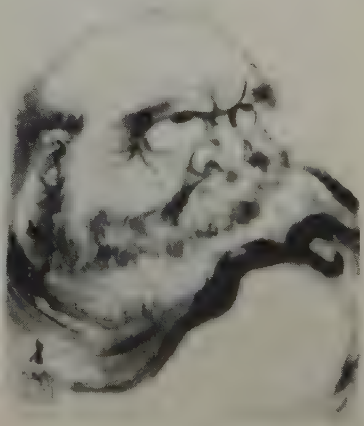
The visible world and all creation, and, in fact, the Creator, arise from the Unground. The Unground is a void, but not a vacuum. According to Boehme, there is Freedom there—in fact, the Unground seems to be the same thing as Freedom. And perhaps, in this freedom, there is a perturbation, a little twist of fluctuation—a desirous attraction between Nothing and Something. In desire, we can see the spark of Heraclitian fire, the eye of the primordial dragon that turns, trying to see itself.

> *Taken out of nature, God is a Mystery, that is, in Nothingness; for outside of nature there is Nothing—an eye of eternity, an unfathomable eye which resides in and looks into nothing, because it is the Unground; and this eye is a will, a desire of manifestation to find Nothingness.*
>
> *—Jacob Boehme, De Signatura Rerum*

The desire to come home.

Boehme experienced his first illumination while gazing into a pewter basin of water—what we might call elaeomancy, or scrying. What is important for us, is that his experience followed a long period of acedia, months of spiritual torment and doubt, a condition that teachers dub as "propitious." Boehme left his shop and walked out of town into the countryside. He claimed that the experience lasted no longer than half an hour, but it changed him completely and forever. He spent the rest of his life refining his insight, going deeper, and, in spite of persecution, sharing what he had glimpsed.

> *Students, even if you gain enlightenment, do not stop practicing, thinking that you have attained the ultimate. The Buddha Way is endless. Once enlightened you must practice all the more.*
>
> *—Dōgen, in Masunaga*



SPLITTING THE HAIR:

A DIALOGUE ON THE GREAT WORLD SYSTEMS

Characters SIMPLICIO, *a practitioner of the poison path*
SAGREDO, *a practitioner of a traditional meditative discipline, let's say, Zen*

◆

SIMPLICIO: We're for doing it the easy way.

SAGREDO: The same. What could be easier than the direct and immediate practice of ground state training?

SIMPLICIO: True, if it works. But for how long do you have to do it? Years and years, I've heard. And some never get it.

SAGREDO: It's the same with your way. But even those who do not attain True Enlightenment find some peace and inner serenity through our way. Even their health generally improves. They are less predatory and more compassionate. They laugh more, and have more poise. Can the same be said of your way?

SIMPLICIO: Yes. . . well, for some. For others, not, I admit. I've seen some who have followed our way for thirty years emerge as Great Egocentric Assholes.

SAGREDO: (Sigh.) It's the same for us, I'm afraid. And they always feel so righteous about it! Maybe we should talk about our successes.

SIMPLICIO: I'm for that. Some of our adepts are so advanced that they look like ordinary people. You would never know, unless you are an adept yourself. Like ordinary people, but maybe with an extra radiance. Otherwise they are like everyone else: a doctor, a mother, a professor, a contractor, a farmer. Like others, but probably with a double life—besides the day job they may have a life in the arts.

SAGREDO: Or in a spiritual practice. Sounds like one of ours. We like to say, "in the world, but not of the world."

SIMPLICIO: Yes, the other world teaches us that.

SAGREDO: Tell me, how would you characterize the difference between that world and this one?

SIMPLICIO: In the other state one can experience the Unity, and the truth beyond selfhood. Also, one can see beyond the perceptual mold that we, collectively, have reified. How would you state it?

SAGREDO: What "other state"? It's right here. . . You see the intrinsic problem with your approach?

SIMPLICIO: You tricked me. You set me up. I'll get back at you when it's time to dance, instead of this Zen stuff, like being wise. But let me ask you, do you find that there are some who are so ensnared by the Illusion that they haven't even glimpsed that there *is* anything else?

SAGREDO: There are many such.

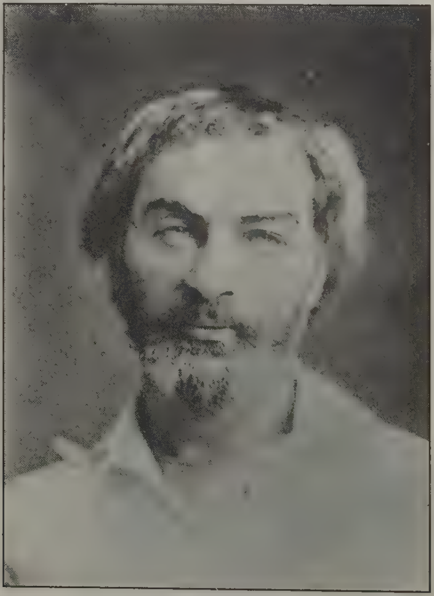
SIMPLICIO: We have the edge, that way. Our poisons have the power to crack open the World. The experience shows people that there is more to the world than they could ever have imagined. And it works on almost everybody, even the deeply cynical. Is it not a good thing to crack open the world?

SAGREDO: Yes. If it sticks.

SIMPLICIO: We say that it is the sticking that is the problem! In our ordinary mind we forget, we say "it's this," or "it's that." That is the frozen part, the ice cubes, the seeming.

SAGREDO: Touché. You set me up.

I saw Sagredo bow, and Simplicio bow back. I blinked and they had merged back together, into Salviati, who was lounging at the base of a tree, just loafing, chewing on a spear of summer grass.



WALT WHITMAN, 1854

THE GREAT TOAD MOTHER: BUFO ALVARIUS

I wasn't looking forward to this. I'm not looking forward to this. I was tired. "Again?" I thought, "another ally?" I've never been big on the dating scene, but meeting an ally isn't even like dating, it's like dating with a trial marriage. You have to give yourself over to it. You don't want the ally to feel like she is being slighted, or that you are only interested in her to talk about in the locker room.

Well, maybe some of that. I'm a writer. But still.

I wasn't up for it. It's a commitment, even if temporary. And you never know for sure, actually, going in, just how it's going to be.

I was more interested in reading about the defeat of Quinctilius Varus in Teutoberg Forest. I was more interested in devoting myself to a strategy game I was coding. The computer's air transports weren't making intelligent decisions about their drop zones. Airborne divisions would drift off-target and land in marshes. It was all stuff that I could understand, instantly, when it was my turn, just looking at the map, and I wanted the computer to make decisions the way I did.

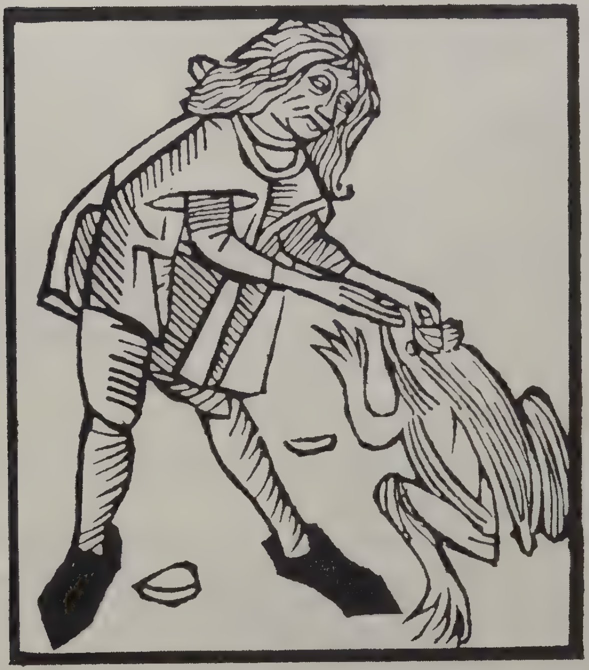
The grass is high. There is a woodshed to build. Cattails have taken over the pond. Soon it will be summer and hot.

And anyway, botanist-types aren't generally big on critters. I don't like pinning insects even if I find them dead under a light. I don't like that business about "parts" falling off. I mean parts fall off of plant specimens also, but in that case the part is a seed or a glume or an anther or something, not a leg or an antenna.

And I like frogs a lot. I don't know toads so well but I know a lot about frogs. I used to live at a frog pond and they would come into the cabin and hang out in the kitchen or hang around the shower, which was outside. For awhile I kept about a dozen tree frogs in a terrarium. There were big frogs and some little ones. I'd go around the cabin with a jar and a stiff card to catch flies, and I'd put the flies in the terrarium and the frogs would do this amazing thing with their tongues. . . like, SPLAT, and they'd have the fly.

One time I was away for a few days and when I came back the top of the terrarium was slightly ajar and the little frogs were gone. I got mad at my kids but they both said "We didn't do it, we didn't do it," that kind of talk. Anyway, I caught some flies and put them in but nobody was hungry. It took awhile but the awful truth finally dawned on me.

"You monsters!" I cried. For two weeks I'd been catching flies for those cannibals.



TOAD POISON EXTRACTION, DE CUBA, 1498

I wasn't looking forward to this. The whole project had been going on for too long. There must be something else to do in the world. Of course, closure is good. Seeing something through to the end, that's usually good. Finishing what you start, that might be good also, I guess, though for sure depending on what it was you started.

And people have been arrested for possessing toads. More than one person, and one just a year ago. For a thousand years now people are being arrested for possessing toads. I mean except for the three centuries before this one. That was the time I think they called "the Enlightenment," and they didn't arrest people for possessing toads during that time. But history has cycles.

I also know that a roomful of mummified toads was found at an archaeological site in the Yucatan, and I know that Allison Kennedy has written about toads in Olmec art and Peter Furst also and Marlene Dobkin de Rios has written some stuff about toads and of course Albert Most, who "wrote the book" on smoking toad venom. Yes, and then Andy and Wade wrote about it. But that was later.

Bufo alvarius, our star amphibian here, lives in the southwest. All toads possess large parotid glands behind their eyes full of various poisons. It's defense. It works, too. Can kill a dog, I think. The heart stops. Or maybe they go blind. Or it paralyzes their respiratory system. A BUNCH OF STUFF.

The gamble here, which I would never take if others hadn't done it before me, is that the "good" tryptamines will vaporize, and the bad ones and the bad other stuff like the bufo-steroids aimed at your heart will decompose.

No one knows if the Maya used these toads for food or for poison. There are theories and speculations. The arrival of the toads was associated with the coming of the rainy season, so in that sense toads were good and there are big carvings of toad-like figures in some of the temples.

Besides, the toad down there is *Bufo marinus*, the cane toad. The big one. The one they introduced to Australia. That toad's parotid glands contain their own distinctive mixture of toxins. *Bufo alvarius* is the only toad whose venom contains 5-MeO-DMT. *Bufo marinus* contains bufotenine. Like all toads. The one toxin they all have.

Nobody "licks" toads. But I've heard that you can dry them out and grind them up and smoke them in a pipe. Which is more or less what I was going to do, except I was only going to vaporize the shellac-looking dried resin that I had scraped off of a glass plate, where I'd squirted it by gently pressing the parotid glands of a particularly sagacious-looking toad.

("Toadies" were people who swallowed toads in sideshows and at medicine shows, who would then be saved from dying by the salesman's snake oil.)

(Mark Lewis made a wonderful documentary called "Cane Toads" about *Bufo marinus* in Australia. There's a little girl in it who's sitting on the ground and hugging a huge toad that is as big as she is and grinning with glee. It's great.)

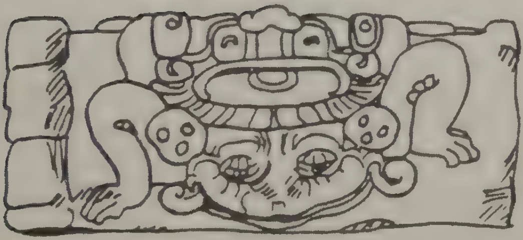
I'm not stalling here. I'm just trying to establish set and setting for the record.

You can be poisoned by some toads just by handling them. Salamanders are even more poisonous, by the way. Their skin contains tetrodotoxin, like the blowfish—the zombie poison that the power doctors use with *Datura* to lobotomize their field hands.

(Maybe along with some "goofer dust," from a dry corpse.)

And speaking of skins, toads will eat their own skin, after they crawl out of it. That's worth thinking about.

Chögyam Trungpa, the Tibetan lama (the "fallen" lama, one funny friend quipped), used the frog as a model of proper meditation: it sits motionless for hours, like it's asleep or in a trance, but if a fly goes by, TWAT, it's got it. My cat's pretty good that way. And speaking of . . .



CAUAC TOAD

The cattails have to be dug out of the pond. There's an acre or two of brush that needs to be thinned, just for fire protection. Chainsaw work. There are the old brush piles from last fall that I still haven't burned. I've been wanting to study electricity. I want to build some of those electrostatic machines that Franklin used, where electricity is a fluid and you can see it and keep it in a jar. I should spend more time making music. I should answer some letters. There's a muffler hanger broken on the car. The garden needs a sprinkling system. I have an unfinished play. Once upon a time I was a pretty good haiku poet. I never send out poems now. The juncos are already all gone to the high country. The sandhill cranes long ago flew north. I have boxes of papers that I've never unpacked since before I moved the time before the last time. There's a flying squirrel who comes down the pine tree at night that seems to have a death wish—the cat's brought him into the cabin five times now. . .

I disconnected the telephone.

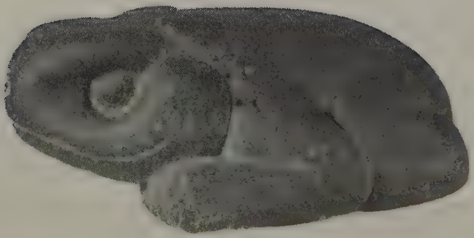
The Ally

And I feel shame
at my presumption,
O Mother.

(& the birds had a lot to say.
& the air, which is warm.
& the walls of my studio,
that are painted a little
like Monet's lily pond,
and which were all moving.
&
Oh!

& after awhile I kind of stumbled outside, thinking I might get sick, but not because of nausea really, just from the shame.
So I ended up kneeling in the grass
for a long time
and dragonflies landed on me.
& there is a lot that I could make up
to say, but I won't, other than that
I too would carve a toad
into stone.)

all the spring tasks
blessedly
undone



THE SPAGYRIC ART: TRYPTAMINES & THEIR KIN

The word seems to have been coined by Paracelsus, referring to chemical and alchemical manipulations, and as such is well suited to refer to separations, purifications, and syntheses where the psychic or spiritual component of the material is of paramount importance. In synthetic work, such as with LSD, the spiritual energy mirrors, and is mirrored by, the purity of the product. With plant work the situation is at once far more complex, from a gross chemical standpoint, and in another way simpler—effectiveness depending upon finding just the right mixture of just the right plants, prepared in just the right way, rather than on any kind of chemical purity.

The question as to whether DMT from plants is somehow "different" from synthetic DMT, though investigated by chemists of occult or anthroposophical leanings, is mostly quite irrelevant. Botanical DMT is rarely, if ever, purified to high laboratory standards, and even when it is, is often perceived as "less friendly" or in some other way less preferable to rawer, more complex preparations.

Ideal botanical preparations are straightforward, reproducible, and spiritually potent. "Straightforward" is of course a loose term—for some this could easily include the use of organic solvents, for others, not. With many plants, such as *Phalaris*, most of the work occurs directly with the plant—finding the right strain, the right growing environment, and the right method of harvest (including the right time of day). The number of variables is so large that it is not surprising that the perfected brews of different plant specialists differ in tone and effect far more than, say, wines from different vintners.

◆

PHALARIS ARUNDINACEAE, PHALARIS AQUATICA [=PHALARIS TUBEROSA]

Both of these widespread species of canary grass are rich in tryptamines. A great deal of phytochemical work was carried out by government agencies in the United States and Australia, mostly to develop low tryptamine strains because it was believed that DMT was responsible for the "staggers," a debilitating condition sometimes occurring in sheep that forage on the grass. It now seems more likely that the staggers are caused by an endophytic ergot fungus, rather than the tryptamines DMT, bufotenine, or 5-MeO-DMT.

The simplest preparation, extraction with a wheat juicer of the fresh cuttings, is the most problematical: a number of adverse reactions have occurred. Whether the toxicity, which has resulted in at least one trip to an emergency room, is due

to tryptamines or to some other component of the grass, is not clear, but could be ascertained by repeating the bioassay which resulted in the toxic reaction (convulsions) without the harmel seed. This experiment, to my knowledge, has not been performed.

Early experiments with *Phalaris* were conducted by Giorgio Samorini and Francesco Festi in Italy and by "Johnny Appleseed" in the United States. Some success has been reported by using sprouted seeds about a week old. However, most *Phalaris* aficionados perform an acid/base extraction to isolate the alkaloids, and then either smoke the product or combine it with harmel into a brew. The art has not yet quite proceeded to the point where one could mow one's lawn in the morning, and then stuff some of the dried clippings into a pipe in the afternoon, but such is not impossible. Without access to professional analytical equipment (gas chromatography/mass spectrometer), practiced skill with thin layer chromatography should be considered a prerequisite for research with these grasses. Various solvent systems and developers are summarized in a handy table by K. Trout (*Tryptamines in Higher Plants*).

The Ally

> *There was a tall gaunt man filling the cabin door. His hair was the color of straw and there was grass or straw poking out from his bulging backpack. He was barefoot.*
>
> *"This must be Johnny Appleseed," I thought.*
>
> *He had a pipe with him, carved from that orange stone that comes from Minnesota, or Montana. And a bottle of brew.*

There is a peaceful quality, a great spaciousness and stillness. There is patterning and geometric imagery, but it doesn't buzz the way DMT does.

> *I'd take an orgasmically blissful puff of 5-MeO-DMT over DMT any day!*
>
> *—MorningGlory*

Mixtures of the two tryptamines are called "the jaguar twins." The 5-MeO-DMT seems to add heart, an empathogenic connectedness.

> *Except when it stretches apart and these spaces open . . .*

5-MeO-DMT escaped being included in the Controlled Substances Act because a conscientious researcher in the sixties withheld a paper describing its hallucinogenic effects. I wouldn't mention it either, if it weren't already all over the internet.

> *Mike was thrashing around on the floor. His legs would twitch and we had to move things (and ourselves) so that they wouldn't get kicked. For a good hour all he would say was "yep." He'd look around with a blank stare and say "yep" in this funny accent and kind of nod.*

DESMANTHUS ILLINOENSIS

The Illinois Bundle-flower, and other North American species, contain DMT and other tryptamines in the root-bark. Yields vary from a third of a percent (by dry weight of the root bark) to none. The bark is ground and steeped in acidified hot water. After straining and filtering, the solution is basified with ammonia to a pH of nine or ten to convert the salt to free base, which precipitates. A layer of ethylene dichloride, or a similar organic solvent, is added and the mixture is gently shaken or rocked in a separatory funnel. The alkaloid base will dissolve in the solvent layer. The aqueous layer is discarded and the tryptamines recovered by evaporation of the solvent, generally as an orange oil. Obtaining crystals requires further purification, but the oil is concentrated enough for pyrolation.

> *I didn't think he was feeling anything, so I asked him a question—he later complained to me about that.*

◆

ARUNDO DONAX

Giant Reed Grass is often mistaken for bamboo. A native of Europe and Asia, it is widely naturalized in western North America. The culms can be twenty feet tall. Tryptamines, including DMT, have been reported from the rootstocks and other parts of the plant, though assays by Trout and Appleseed have been mixed. A quaternary tryptamine in the root is reported to be a cardiac poison. Nonetheless, I have heard one positive report of a successful brew.

Arundo donax is highly aggressive. I once dug up some *Arundo* from a dry wash and planted it behind my garage. Within a few years they had taken over—blocking windows, bending over and blocking the garage, spreading all across the yard. The Mexican women down the alley gathered the leaves to wrap tamales.

> *The reeds, of the woodwind section, come from this plant.*

◆

VIROLA SPP.

Several species of *Virola*, large neotropical trees in the Myristicaceae, the nutmeg family, produce a bright red resinous sap that is rich in tryptamines, especially DMT. The resinous inner bark is powdered to make the powerful *epena* snuff.

◆

CEBÍL (ANADENANTHERA COLUBRINA)
COHOBA, YOPO (ANADENANTHERA PEREGRINA)

Both of these species are small leguminous trees related to *Mimosa* and *Acacia*. *Anadenanthera peregrina* favors the dry tropical savannas of Brazil, Colombia, Venezuela, and Guyana, but had been traded to the Caribbean Islands, and planted there before Spanish contact. Las Casas mentions the cohoba snuff made from the seeds, and cohoba is apparently the namesake of the Island of Cuba (Rätsch, 2005).

The use of psychedelic snuffs containing *Anadenanthera* seeds was (and is) extremely widespread in South America. Rätsch lists over fifty tribes whose use of the snuff is documented. Snuffs, in fact, may be the earliest mode of shamanic intoxication. Many ancient pieces of paraphernalia have been recovered: beautifully carved snuffing trays and snuffing tubes. The point with snuffs is to get the snuff into your sinuses, not into your lungs. This is accomplished by placing a snuffing tube into one's nostrils, and having another person blow in the snuff (you don't inhale during this process). Almost everyone reports that the procedure is painful.

> *One of these [snuffing tubes] is in the form of a naked woman who is spreading her legs and wearing a death's-head. In order to use this tube, you must place the skull against your nose. The other end, the opening of the vagina, is used to take in the snuff.*
>
> *—Rouse, in Rätsch*

Anadenanthera peregrina contains DMT, 5-MeO-DMT, and bufotenine. Effects begin almost immediately, and last for ten or twenty minutes.

The dried, ripe seeds are lightly roasted and ground into a fine powder, which is sometimes mixed with an alkaline plant ash. The minimum dosage is about a gram of seeds. That's a lot—about half a teaspoon.

Bon voyage.

Go with blessings.

The closely related *Anadenanthera columbrina* is found in two distinct populations, one from eastern Brazil and the other in the southern Andes and neighboring areas. In the Salta region of northwestern Argentina, whole forests of cebîl trees cover the mountains (Rätsch 2005).

Rätsch summarizes the history of cebîl so concisely that it makes sense to quote him:

> *The seeds of the variety known as cebil were being smoked in pipes over 4,500 years ago in the Puna region of northwestern Argentina (Fernández Distel, 1980). Its use appears to have had a particularly profound effect upon the culture of Tiahuanaco (literally, 'dwelling of the god').*
>
> *Cebil's usage as a snuff in the southern Andes is first mentioned in the Relación of Cristobal de Albornoz. Use as an additive to maize beer (chicha) was first described by Polo de Ondegardo in 1571. The Mataco Indians are said to have brewed a vino de cebil (cebil wine) even during the twentieth century.*
>
> *—Rätsch, Encyclopedia of Psychoactive Plants*

Cebíl seeds are stronger than those of *A. peregrina*, and it was formerly assumed that the demonstrable psychoactive effects must be due to DMT or 5-MeO-DMT, but recent analyses have found only bufotenine, at least in some populations, necessitating a reassessment of the hallucinogenic properties of bufotenine.

The dosage of cebíl seeds, prepared as above, is as little as 150 mg, ranging to 0.5 grams, insufflated. (Montgomery, Torres, Ott, personal communications).

The seeds can also be smoked. Coca is said to enhance the effects (and is recommended, as, without it, the experience is not a lot of fun—being mostly pressor effects).

Dave Repke found bufotenine concentration to range from 4 percent to (a whooping) 12 percent (Torres, in Rätsch).

Viable seeds of the plant are available, and growing it should be easy enough in most Mediterranean climates.

> *They're sweet little darlings. They close up at night.*

From the Retort

Alexander Shulgin and other creative chemists have produced a large number of molecular variations on the tryptamine backbone, with names such as AMT, DPT, DET, DIPT, 5-MeO-AMT, 4-Acetoxy-DET, 4-Acetoxy DIPT, and 5-MeO-DIPT. Each of them has its own character, dangers, and promise, and the DEA keeps using "emergency powers" to schedule them onto its blackest list beyond even medical exploration. No one has made clear what the "emergency" is. For the DEA the emergency seems to be that young people take them to get high. One man, who had the temerity to be less than contrite in court was recently given a life sentence for selling such research chemicals on the internet! Such wholesale prohibition clearly has little to do with public safety. Not that there haven't been deaths from drug overdoses—there have—but there are more overdose deaths from aspirin than from all of the "research chemicals" put together. I'm not saying that these chemicals ought to be available on the internet—that would be easy enough to legislate, if such availability could indeed be shown to really be a public health issue—but outlawing them is preposterous.

The issue, of course, is not public health at all. The issue is getting high. It doesn't matter a whit that all you are doing is lying in bed watching a video.

> *Besides, young people are SUPPOSED to get high. Says so in the Bible. . .*
> *"even slaves and slave girls."*

The effects and dosages of this confusing alphabet soup of chemicals are now well-documented on the Erowid web site (*www.erowid.org*) and in Shulgin and Shulgin's *TIHKAL.*

Pertinent to our interest in the Doctrine of Signatures, Shulgin notes that a number of brominated DMT derivatives are found in sponges and other marine invertebrates.

Shulgin also notes that while fungi oxidze tryptamines at the 4 position, frogs and toads use the 5 position. The mystical significance of this fact remains elusive.

> *When you design a new tool, a new compound, a potential drug, you are playing very much the role of an artist. You have a blank canvas in front of you. You have a pallet of oil paints, which is your collection of chemicals, and solvents, and catalysts, and reagents. You have the skill and talent in your hands of creating. With the artist, this is painting; with the chemist, this is synthesizing. And you have an inspired image of what the final picture might be. You have a target. You may be quite surprised as to where you eventually get to, but you indeed have a goal.*
>
> *—Alexander Shulgin, TIHKAL*

Or like that chemist I met who said that sometime, perhaps only once, but certainly at least once, before he died he was going to make LSD, "Just to repay my debt."

J. POPE

THE TOPOLOGY OF THE BETWEEN: DMT

Daß ich erkenne, was die Welt
Im Innersten zusammenhält,
Schau alle Wirkenskraft und Samen,
Und tu nicht mehr in Worten kramen.

—Goethe

That I might know the innermost weave
of the world, witness
its dynamics and creation,
and stop rummaging around in words.

In the old days, for pot-smokers and acid heads, there was pot, there was acid, and then, beyond them all, there was DMT.

I'd told L. that I was going to smoke a big dose of DMT, and that I would probably do it that afternoon. She thought I should wait—she wasn't going to get home from town until nearer to evening—maybe I should wait until she could be there as a sitter. I assured her it wasn't necessary. I didn't do it, actually, there were too many other things to do, but I couldn't resist playing a joke when she came home. I dribbled some milk over my chin, pulled my pants down around my ankles, and curled up in a chair mumbling stuff about spells and spirits that should have been in the Book of Abra-Melin the Mage. This woman turned out to be pretty hard to scare, though. She broke out laughing right away. That was a good sign.

In the old days DMT was usually rolled into a joint, though maybe a joint of parsley or mullein which is easy to inhale. Today there are large bowled glass pipes and various vaporizers, which are better. A "crack pipe" is probably adequate, but I think a 50 ml bowl is ideal, if heated carefully and evenly.

There were rumors of "DMT heads" who did it a lot. It was hard to imagine. Mark admitted that "some of them were kind of weird."

Deep psychonauts of DMT space usually agree that it is very difficult to bring anything *back* from the space, or to talk about it in any way with someone who hasn't been there. This may be why Alan Watts and some others have dubbed DMT as "not too interesting."

But a challenge has been laid down . . .

With lighter doses smuggling stuff back is easier, and I've always thought that the DMT "cowboy" types, emphasizing the large doses, might be missing a tool of great usefulness.

Dosage Gracie and Zarkov, in *Notes From Underground*, recommend 40 to 50 mg freebase for breaking through the visuals into "hyperspace." Dosages below 25 mg generally yield only threshold psychedelic effects. They state that anything in excess of 55 mg, if one is successful in holding in all of the vapor, "can be *VERY* heavy." Shulgin lists an incredible "60 to 100 mg, smoked," which is high even by Terence McKenna's standards, and I suspect an erratum meant to refer to I.M. injection. The late D. M. Turner, no slouch in such matters, said "about 40 mg." So much depends on the mode of delivery and how much of the DMT you can get into the first lungful. Multiple tokes are never as powerful as one really big one. If you can cleanly vaporize 50 mg of DMT and get it into one lungful, you won't be reaching for a second one.

Duration of the effects are usually cited as three to five minutes of peak plateau, with rapid return to normality over the next ten to twenty minutes. Or so it is said.

For many years DMT was known only as a synthetic chemical. It was first synthesized by the Canadian chemist R. Manske in 1931, but only its basic chemical properties were investigated. In 1946, Gonçalves de Lima isolated an alkaloid from *Mimosa hostilis* that he named nigerine, not recognizing it as the same chemical earlier synthesized by Manske. In 1955 M. S. Fish and his colleagues isolated DMT from *Anadenanthera peregrina*, the source of the hallucinogenic snuff cohoba first reported in 1496. The first demonstration that pure DMT was active in humans, and that it was the compound responsible for the hallucinogenic properties of cohoba, didn't occur until 1956, by Stephen Szára, a Hungarian psychiatrist and chemist. Szára had wanted to experiment with LSD, but Sandoz, afraid of LSD falling into the hands of Communists, had refused to ship him any. Undeterred, and evidently following a hunch based on Fish's paper, Szára synthesized his own DMT and began a series of self-experiments. First trying oral ingestion, Szára was unable to find any activity, even after working up to taking a full gram. With admirable perseverance, intuiting that something in his digestive tract might be deactivating the molecule, Szára injected himself with what now might be called a "half-dose" of DMT (0.5 mg/kg) and lost his doubts (Ott 1993, Strassman 2001).

SPIRIT OF THE MOLECULE,
T'ANG, 618-906 CE

Szára continued his experiments on himself and a group of volunteers at intramuscular injections of one mg/kg.

> *Eidetic phenomena, optical illusions, pseudo-hallucinations, and later real hallucinations appeared. The hallucinations consisted of moving, brilliantly colored oriental motifs, and later I saw wonderful scenes altering very rapidly.*
>
> *—Szára, in Strassman*

William Burroughs, ever on the cusp of novel drug research, was experimenting with DMT in 1961, generally finding it terrifying.

Oscar Janiger was the first psychiatrist in the United States to administer DMT "clinically." One person he administered it to was Alan Watts. Watts had bragged that there was no drug that could shut him up, and in his loquacious way had stood to all comers. After first trying the DMT on himself (by self-injection, which he said was one of the stupider things he had ever done), Janiger called up Watts and bet him that this new drug would be his undoing. Watts accepted the bet and lost, staring at Janiger for twenty minutes while Janiger kept saying "Alan, Alan, please say something. Talk to me Alan. Your reputation is at stake." Janiger also gave DMT to Al Hubbard, who added it to his little bag of medicines and his ever-widening circle of psychedelic dissemination, and asked for reports back. According to Jay Stevens, "Everyone who took DMT agreed that it was a hellish half hour, with absolutely no redeeming qualities" (Stevens, *Storming Heaven*).

The Harvard team also experimented with DMT, and they may have been the first to use an IM injection of DMT to bring someone out of a "bad" LSD trip. (When I first heard about that it seemed incomprehensible—as in insane—but, actually, yes, why not—they also tried amphetamine). They also used it once to cure Richard Alpert (later Ram Dass) of a cold:

> *One night Richard Alpert retired early with a bad cold. [Michael] Hollingshead and a friend named Arnie Hendin decided to fix him up. When they couldn't rouse him, they gave him a shot of DMT in the buttocks. Alpert sat bolt upright, and before the DMT wore off they fed him an additional 800 micrograms of LSD in a spoon. Three stereo systems were blasting Coltrane, Stockhausen, and Beethoven simultaneously. A sea of rocky sounds enveloped Alpert as he swirled through a neurological flux. When he came down from his trip, he found that his cold symptoms had completely disappeared.*
>
> *—Martin Lee and Bruce Shlain, Acid Dreams*

Ralph Metzner included DMT in his survey of psychedelic compounds that was published in the first issue of *The Psychedelic Review* in 1963.

DMT is now known to be widespread in the plant world, particularly in the grasses and the pea family. In trace amounts, as Alexander Shulgin titled a chapter in *TIHKAL*, "DMT is everywhere." It is also found in the human body, and in the human brain. Shulgin ends that chapter by outlining a possible production of DMT enzymatically (using, I assume, catechol-O-methyl transferase):

> *What a fabulous black-box that would make. Get two enzyme preparations, one that can methylate S-adenosyl-homocysteine to S-adenosyl-methionine and another that can regenerate S-adenosyl-homocysteine by transferring the methyl group to an available amine. Two catalysts in a chamber heated to 37°C, with a spigot adding tryptamine at the top, and another releasing DMT out the bottom.*
>
> *—Shulgin and Shulgin*

The only clinical study on the effects of DMT since the 1960s was by Dr. Rick Strassman, a practicing psychiatrist and a tenured professor at the University of New Mexico. Strassman used "experienced" volunteers, to whom DMT was administered intravenously. Like Descartes before him, Strassman believes that the pineal gland may be the "seat of the soul." And, like Descartes, Strassman is a dualist who believes both in the reality of the world of matter and in the reality of a world of spirit—an ancient conundrum. Strassman speculates that the pineal gland may produce DMT, and that DMT is the "spirit molecule" that mediates between the two realms. To those who have never fallen under the spell of DMT, of course, some of Dr. Strassman's hypotheses may seem far-fetched.

Yes. . . Or even some of those who have. . .

Our interest here is not to assess the truth or falsehood of Strassman's arguments, but to examine the philosophical implications of their underlying premises. First, Strassman assumes that DMT is a neurotransmitter (which may turn out to be the case), and, second, that DMT is produced "in psychedelic amounts" in the pineal gland, which should be easy enough to determine in a laboratory. Strassman hypothesizes that the pineal gland produces prodigious amounts of DMT at extraordinary times in our lives, such as when the "life force" enters the fetal body through the pineal gland on the forty-ninth day after conception, again at birth, and during experiences of deep meditation, psychosis, and near-death encounters.

> *When our individual life force enters our fetal body, the moment in which we become truly human, it passes through the pineal and triggers the first primordial flood of DMT.*
>
> *—Strassman, DMT, The Spirit Molecule*

Other connections are proposed between pineal release of DMT and sexual orgasm, tantric meditation, and death itself (when the "life force" exits through the pineal).

One of the connecting assumptions seems to be that profound spiritual experiences, such as "enlightenment," are psychedelic. Which *may not* be true at all.

Quite apart from the issue of vitalism.

And then there is the matter of Entities.

Strassman roughly categorizes the DMT experiences of his volunteers into the personal, revelations relating to one's life and relationships; the mystical, relating

AN UPPITY ENTITY

to spiritual insights; and the transpersonal, encounters with autonomous entities. Rick says that his training as a psychiatrist prepared him for the first and that his training in Zen Buddhism helped him with the second. The third was more problematical. Finding it unproductive to "explain away" meetings with entities as dream-like projections ("No, this was real; I know the difference."), Strassman decided to relate to the reports "as if" they were true. That is, a *shamanic* approach. So far so good. The problem was that some of the Entities weren't content with their assigned status in limbo-land, and insisted on asserting their independence.

> *Therefore, let's consider the proposal that when our volunteers journeyed to the further bounds of DMT's reach, when they felt as if they were somewhere else, they were indeed perceiving different levels of reality. The alternative levels are as real as this one. It's just that we cannot perceive them most of the time.*
>
> *—Strassman*

There is nothing in this statement, I think, that William Blake, a man who had a lot of experience with Entities, would find objectionable, other than perhaps not capitalizing "reality." But then Strassman goes on to suggest that there is a *physical* basis to these realities involving the "many worlds" model from quantum physics, dark matter, quantum interference, and the WIMPS boson—a rather amazing tribute to the power of this "hallucinogen," and to the way that physics has become our theology.

> *Actually, parallel universes are well-explored—it's called "literature."*

And the genre of all the literalist attempts to explain the profundity of visionary experience in materialist terms such as DNA resonance, quantum coupling, dark matter, etc. etc., is science fiction. McKenna felt most at home there. It's a question of style and inclination, and perhaps for a little literary criticism. . . Blake's genre was poetry.

> *The dark Religions are departed & sweet Science reigns*

The good doctor's trials were not over, though. The Venerable leadership of his Zen group decided that research with psychedelics was contrary to the way of the Buddha, was "wrong livelihood according to the Buddha's teachings," and that he should cease immediately. Rick tried to meet them halfway: "I accepted the theoretical possibility raised by Gwendolyn that someone might mistake a real enlightenment experience for a psychedelic 'flashback'." The leadership was not interested in further dialog.

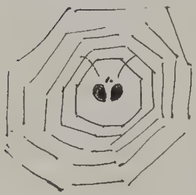
> *You are well-rid of them, my brother. But be of good cheer. I know of a Zen group where even non-Buddhists are welcome.*

And I asked my dream helper about the flashback matter. He said that it was nonsense, that there was no way that a genuine enlightenment experience could be mistaken for a psychedelic flashback, a vision of the Golden Universal Buddha, or any other makyō, almost by definition. The problem, he said, was wholly the other way, in mistaking DMT or other makyō experiences for enlightenment.

> *C'mon now, he added, don't look so downcast. The unenlightened have more fun.*

'Course, he *was* a dream helper, and what's a dream helper if not a *makyō*.

The Ally



> *Several large 'life size' insects appeared. One was kind of lobster-like, with pincer claws, and two very sweet and friendly mantises who were peering in the windows—although they seemed to live within the honeycomb of the geometric octagon. There were no threats or terror, just curiosity, and they didn't operate on me like Sheelo's mantis brain surgeons. They told me I had to take more deep breaths.*

It is impossible to approach DMT today without assessing the work of Terence McKenna. McKenna contributed a number of images that have proved to be remarkably enduring, such as the fractal elves, self-dribbling basketballs, and extraterrestrials. For Terence, DMT opened to door to an entirely new dimension of reality, a dimension wholly *Other*, and he glimpsed the Apocalypse, an Omega point towards which all of history and prehistory has been converging. It was a teleological vision.

> *Under the influence of DMT, the world becomes an Arabian labyrinth, a palace, a more than possible Martian jewel, vast with motifs that flood the gaping mind with complex and wordless awe. Color and the sense of a reality-unlocking secret nearby pervade the experience. There is a sense of other times, and of one's own infancy, and of wonder, wonder, and more wonder. It is an audience with an alien nuncio. In the midst of this experience, apparently at the end of human history, guarding gates that seem surely to open on the howling maelstrom of the unspeakable emptiness between the stars, is the Aeon.*
>
> *—Terence McKenna, The Food of the Gods*

The entities Terence encountered were alien. Like any good explorer, he tried to interact with them, to listen to what they had to say and to come back with a report. He also recognized that previous reports of this particular alien life-form were mostly non-existent, though he certainly did his best to find them. One of the places he looked was art.

> *There are few clues that these extradimensional places exist. If art carries images out of the Other from the Logos to the world—drawing ideas down into matter—why is human art history so devoid of what psychedelic voyagers have experienced so totally? Perhaps the flying saucer or UFO is the central motif to be understood in order to get a handle on reality here and now. We are alienated, so alienated that the self must disguise itself as an extraterrestrial in order not to alarm us with the*

> *truly bizarre dimensions that it encompasses. When we can love the alien, then we will have begun to heal the psychic discontinuity that has plagued us since at least the sixteenth century, possibly earlier.*
>
> *—McKenna, The Archaic Revival*

While Terence recognized much in art history that was "psychedelic," he states "what amazed me was the total absence of the motifs of DMT. It is not there; it is not there in any tradition familiar to me."

There is a very interesting distinction being made here. The meaning of the word "psychedelic" as an artistic adjective has changed somewhat in the last half century, stretching from anything that is weird or mind-boggling to paintings that are particularly explosive, colorful, or otherwise somehow "altered." The term can generally be used with agreement among initiates. Not all psychedelic art is visionary, but almost all "visionary art" is psychedelic, within which DMT art is an (often) distinct subset. Psychedelic initiates often like to guess an artist's favorite drug: "That's mushrooms," or "That's acid." When someone utters "That's DMT," there is rarely any disagreement.

Sometimes it is the colors: black light colors, the blues blended with and outlined by white. Very often the paintings are bilaterally symmetrical, like a Rorshach ink blot. Much DMT art is now computer-generated, often using Mandelbrot sets or other fractal equations, but even the paintings often have the plastic refractive quality that computer scientists have spent so much effort trying to overcome. There are transparent bubbles and pods and extraterrestrial landscapes. Dendritic forms are common, as is x-ray vision. Crystals are also frequent. Much of the art is illustrative, has a commercial feel to it, and finds its way onto book and record album covers. And, of course, the movies—DMT can have a cartoon quality. Science fiction themes are common. Sometimes visionary artists are able to capture the movement and churning of DMT experience.

The main problem of DMT art, aside from the ubiquitous presence of spiritual clichés, is its embarrassing obviousness. Subtlety is not one of DMT's qualities. This is perhaps the first clear signature of DMT discernable to an *etic*, or outside, observer.

> *That is NOT an etic observation.*

DMT art (and I'm referring to smoked DMT) seems like an island culture—there's an inner consistency to it. It's about other worlds but so many of them look the same; it's about another dimension but a particular dimension.

> *Or is it?*

Yes. That's the Question.

> *One of the interesting characteristics of DMT is that it sometimes inspires fear—this marks the experience as existentially authentic. . . I'm not saying that there's*

> *something intrinsically good about terror. I'm saying that, granted the situation, if one is not terrified then one must be somewhat out of contact with the full dynamics of what is happening.*
>
> —*McKenna, The Archaic Revival*

Thank you, Terence.

●

Effects (30 to 35 mg, in three lungfuls)

She took three deep inhalations and let her head fall back. There were a few giggles and she had a wonderful smile on her face the whole time.

> *It was very pleasant. I was lost in colors and patterns, but that was fine. When I opened my eyes and looked, you were smiling and I could see the outline of your leg bones. Now I understand Alex Gray. But the artists don't get the movement, the way everything pulses and breathes. There was nothing ominous or scary, and I didn't feel catapulted. I gently sank into a featherbed of bejeweled rainbow colors—the jeweled dome. Extremely light-filled. It didn't have that ominous quality, like xenon does, or Phalaris, which is like xenon in black and white.*
>
> *I'm wondering if it could be used as a short-term anti-depressant. It's so easy and quick and it makes you feel grounded and good and there is no hangover.*

Reading through "trip reports" in the Experiences Vault at Erowid of people who have smoked or insufflated synthetic tryptamines, I was struck by how many people get high and watch videos. (I favor anesthetics for that. Filmmakers are already too heavy-handed with the emotional powers of their medium). D. M. Turner had an integrated entertainment center that he could preprogram—sequencing of the cuts from the CDs and linking them to changes in the lighting of the room—the ultimate "tripping room." I think we have reached what we could call "recreational use."

> *Thrill seekers.*
> *And man, it got em.*

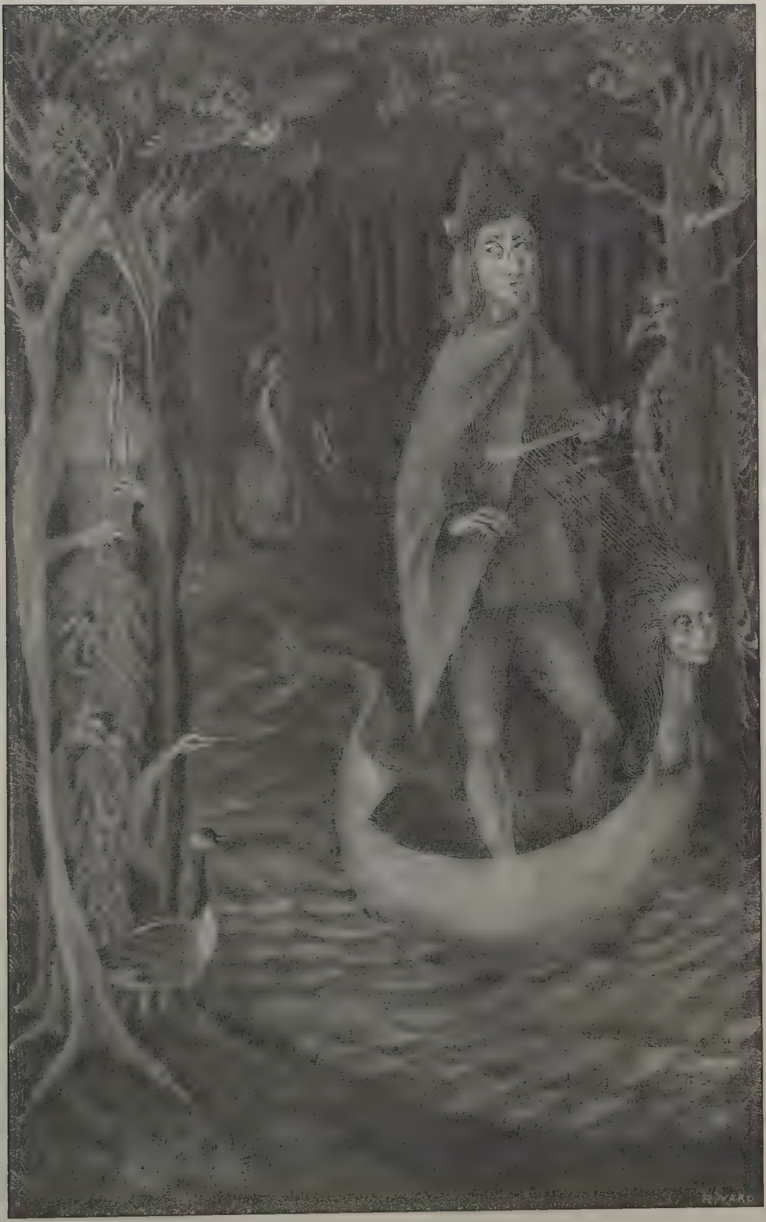
DMT amplifies the mental perceptions of the eidetic imagery by so many orders of magnitude that the usual road signs of the ego, who I am, how I react to things, what kinds of things I say in such and such a situation, are lost. This flirtation with madness, with its accompanying twinge of terror, I think, in fairness, qualifies as a "thrill."

> *So. . . what's your hangup here?*

Fair enough. My Protestant upbringing, maybe. But there's more. "Oceanic feelings." A glimpse how of thoughts are connected. A glimpse of meta-consciousness, meta-awareness, maybe a Platonic layer, or a layer of abstraction that floats up like an equation from a parabola.

There are fibers of geometry
that dumbfound even sailors

—DP, 1968



EL TROUBEDOR, VARO, 1959

And a bit of whatever the place is where magic lives. All adding up to a very spicy and seductive song. THERE IS MEANING HERE. THE SECRET IS HERE. Most people just kind of go "what was that?!" Terence thought everyone should have the experience at least once, just to be a complete person. To really have their foundations kicked.

> *The Voice of one crying in the Wilderness.*
> *(a funky voice)*

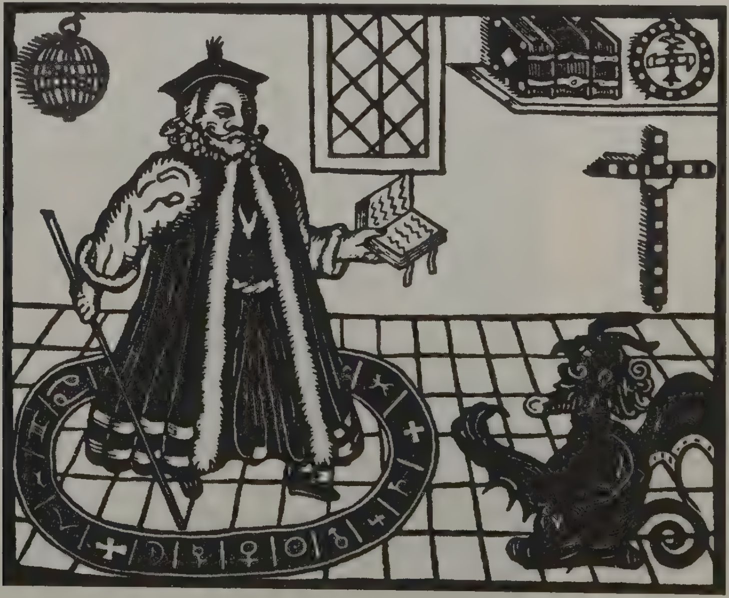
What WAS that?

I've come back to find out. This time I don't want to be driven by music. I don't want to be captive to that etched in stone, we could say, or vinyl. Terence was gaga on the Logos: "the Code."

> *That's because he was such a gifted bullshitter—his ally had a big thing for gab.*

But I wasn't anxious to meet Terence's elves, or, really, for any of it. Nor had been Terence, from what I hear: he only took it a handful of times and backed off when the Entities began making demands. For me, DMT had always been too plastic, too celluloid, too much like a wild animated cartoon. If there is great meaning there, by now we should have some evidence, from those who have frequented the realm. So I can't say my attitude was particularly positive. More the opposite.

But, in a word, I was desperate: I needed the goods.



DR. FAUSTUS, 1631

Scene: Faust's Study

FAUST: Ahh. Who are you?

SPIRIT: I am that light called the Power of Darkness.

FAUST: I can't see your face.

SPIRIT: As I said. Do you have a request?

FAUST: Yes, I do.

SPIRIT: What is it? You have come so far.

FAUST: I want the good lines.

SPIRIT: Heh. Well, that's easy for me.

FAUST: There is more.

SPIRIT: What's that?

FAUST: They have to be true.

SPIRIT: You do have a heavy request. Why not ask the Powers of Light?

FAUST: It would be too revealing.

SPIRIT: Do you fear revelation?

FAUST: No. I fear awe. Is that not seemly?

SPIRIT: It is to my eye. But then, it would be, wouldn't it? Put the pipe to your lips. The amines are part of my realm. Smell them. I claim nitrogen, and thus the air.

FAUST: Then is oxygen God?

SPIRIT: Oxygen is fire.

FAUST: And carbon?

SPIRIT: Earth.

FAUST: I follow you. So hydrogen is water.

SPIRIT: Etymologically it is incontestable.

FAUST: So what do you want from me?

SPIRIT: You know.

FAUST: I already gave you that.

SPIRIT: Not good enough. Freely given, there is no contract.

FAUST: Then show me.

SPIRIT: Apply the fire.

> *Dear Spirits of this Molecule:*
>
> *Many years have passed now on my quest to you. I've forgotten why I started—some unfinished business between us. I'm not interested in cartoons, colors, or roller coasters any more, nor in UFOs or extraterrestrials. Nonetheless I have come the distance, I have survived, and now I am here. I hope I have not failed. You are the last of my pledges, and I wish to be relieved of any further obligation to record your words.*

Dose: big, one lungful, got it all.

T*he* A*lly* (I'm not going to take you there with me you wouldn't understand I've no idea what anybody else would experience with this and I don't care a lot because there's not space for that it's too engaging)

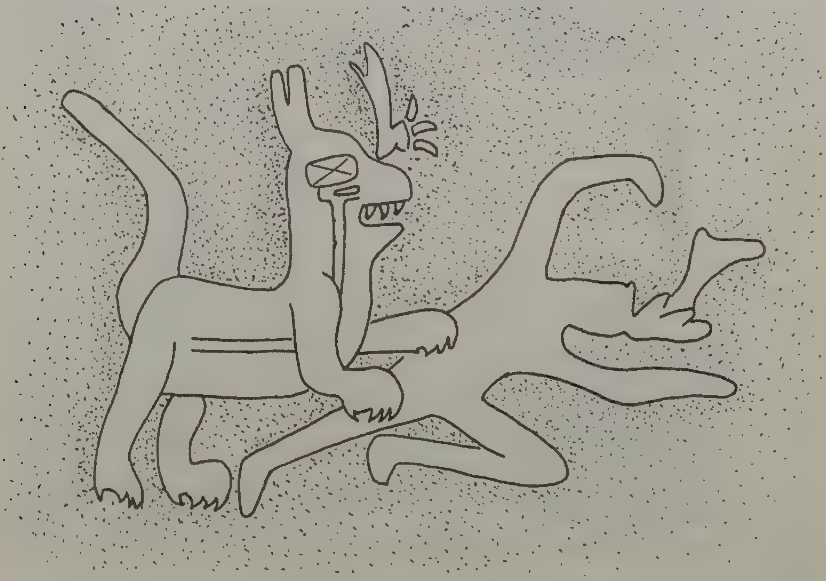
So now I think I know about possession.

I will not talk about my ally other than that she has whiskers and is a touch territorial.

I like her fine.

You should have seen what she did to the other spirits nosing around especially shaman types with their dismissive attitudes and to things like conceptual thoughts or judgments or even hits of such.

> *"Mine!" she screamed, "He's mine, mine!"*



OLMEC BAS-RELIEF, MEXICO

x+1 minute "There was a 'Hmmm'. Little laughs, then 'Ahhhh, ahhhh, ahhhh, ahhhh' louder and faster."

The visuals were first. The wall dissolved into a pulsating membrane of fantastic colors before I had settled back into the chair. "Yes," I thought, "DMT." That lasted about one second. After that there were no more walls, room, or anything that I had known before. I was in a matrix of little black and gold spheres, all connected to each other by tubes, like tinkertoys—a kind of universal energy grid where the spheres were flashing and exchanging colors. On reflection I'd call it the Net of Indra. I was seeing it but it's more like there was no other existence, no possibility of any other existence—it *was* existence. And it was buzzing like a high energy hornet's nest. Very high voltage and very insistent.

> *Oh yeah? You? You don't know shit, you puny upstart!*

If my attention wandered even a bit the buzzing got louder and called me back. It felt like it was about to overload and short out. I was going to say "Oh my, here we go . . ." but I never got the words out. Things went black and I was in shamanic space.

x+2 minutes "You jumped out of the chair and we had to restrain you, but only for a little while. You were flailing and knocking stuff over."

x+4 minutes "You were bent over in 'the child's pose' and yodeling and crooning and howling. It sounded a lot like a cat in heat."

There were some issues with another shaman, delicate issues because of community. "Wimmin" stuff. *"Through the female line only."* That was said. My ally had her own ideas about that!

x+11 minutes "You rolled over on your back. Deep breathing. Your face was very purple."

It SEEMED to last for a long time and then I'd think it was over and then someone would have something to say and then it'd be a catfight again. Some of it was playful.

> *She was like a tiger in a cage, jumping off the walls*
> *and snapping at anything that moved.*

x+15 minutes "You were still howling and crawled partway out the door and started adding in whistles and trills."

The birds started kibitzing early on. Territorial matters are an old story to them. After that I spent most of my time talking to the birds. There was lots of acknowledgment and frequent comments like "not bad" or "yeah yeah." A couple of times I was good enough to be let in on jams.

> *There he lie, snot and slobber all over his face,*
> *whistling at the birds and shouting like an idiot.*

$x+17$ *minutes* "The birds were responding. It sounded like you were having a conversation with them. At one point you turned to me and said 'These guys are great.'"

There was a crane fly that I had in a plastic jar to feed to the lizards. I howled about that, the life and death thing, and the birds said "Yeah, we know, happens a lot here. You have to live with that" but I let the crane fly go anyway.

$x+22$ *minutes* "You turned and asked me how I was doing but then went right back into it, snarling sometimes and clawing with your hand. Growls and some spitting. The cat was scared but mostly very concerned."

Finally the birds got bored and the towhees came down, hopping on the grass and eating and even when I screamed at them and shouted and slapped the ground they ignored me. It was like, "Yeah, you did ok, but you're new at this and we've got stuff to do."

And now I know why we wear feathers.

$x+27$ *minutes* "You said 'shit, can't even scare the birds' and laughed and went on whistling and whooping. Birds in the background were chattering back."

$x+33$ *minutes* "You stood up and picked up your rattle and said 'lots going on in there' and started shaking the rattle."

$x+38$ *minutes* "You started talking."

$x+42$ *minutes* "Tobacco. More talking."

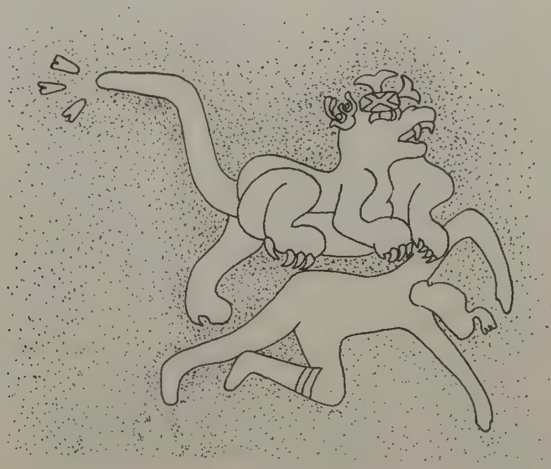
About the drama of the interpersonal encounters, and certain greetings to be passed on to you, and about that long speech from what I guess is my ally.

She chose me. I didn't choose her. There ARE men who can live with that.

She marked me before she left. I kept smelling something like catshit for a couple of days. Nobody else could smell it but I could.

Und tu nicht mehr in Worten kramen

Fat chance.



HERE THERE BE DRAGONS

DAIMONICA

The Sages of Old instruct that the occult knowledge of Trees and Herbs, as well as the sacred arts of healing, divination, and enchantments, was given mankind in remote times by the gods. According to the teachings of some religious traditions, these were the so-called Fallen Angels, exiled from the celestial mansions by a jealous demiurge; or descending by will to share their divine power with the races of men. The ancient Books of Enoch reveal how those heavenly luminaries known as the Watchers took the daughters of men as wives and taught them the arts of astrology, writing, metalworking, perfumery and herbalism.

By other accounts these tutelary divinities were the beloved nymphs, tree-spirits, fairy-folk, sylvan genii, or rustic entities allied unto the dominions of the wilderness, such as good Chiron, that venerable centaur who taught the great god Asklepios the disciplines of medicine. In many traditions, it was the Trees and Herbs themselves, or the land wherein they were rooted, who taught the plant-doctors their art, often revealing themselves by way of a unique 'Language of the Trees' whereby vegetal powers were accessed by song and incantation.

With the ascendance of monotheistic cults, a great many of these plant luminaries were assimilated to a false lexicon of demons, and the Art Magical, once the pursuit of sages, was made heresy. Eventually Nature herself came to be viewed as an evil spirit, representative of powers to be bound, exploited, and civilised.

—Daniel A. Schulke, Viridarium Umbris,
The Pleasure Garden of Shadow

◆

I wish that this moment, and its power, be extended.

I wish that I might have the power to crawl away and relieve myself—that I not piss the bed.

I wish that the laws of the contract might be bent, that more miracles be given, that from one vertex many might be graced.

I wish for the power of knowledge, and the power of flight, and the power to pass through matter.

I wish, O Genie, to be like yourself.

> *I wanted to get into the shower so I took off my clothes and was putting them in a pile. I'd take off several vests and shirts and my pants and then a pair of long-johns and then there would be more clothes to take off underneath that. The pile kept growing. "Wow," I thought, "It must be really cold today for me to have so many clothes on."*

The repeated intrusion of present tense is common enough to be considered characteristic.

SPECTRES PREPARING A BREW

TOLOACHE, FLYING HERBS, AND THE WITCH'S GARDEN: TROPANE ALKALOIDS

Tomatoes, potatoes, eggplant,
henbane, belladonna, and bittersweet,
chilies and red pepper and green peppers,
the magical mandrake,
Solandra, Brugmansia,
Datura

Yes. And don't forget tobacco. The family Solanaceae, the nightshades.

Blue Witch. Blossoming in the hills.

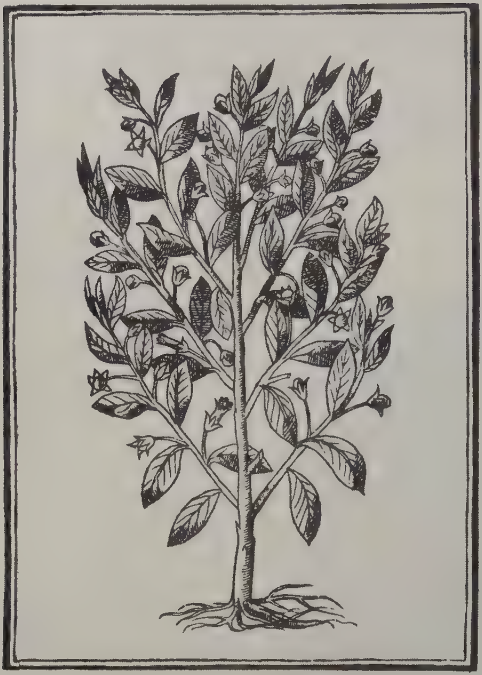
The petals are fused, the corollas are rotate (shaped like a wagon wheel) to tubular. Blue flowers are common, also yellow and white. The stamens are yellow and often adnate—stuck together in the center over the pistil—and this is a distinctive field characteristic. The fruit is a capsule or a berry. The herbage is typically somewhat rank. Put together, the Solanaceae is one of the easier families to recognize: there's a feel to them—maybe an aura of danger, like coming across a snake, or an *Amanita* mushroom.

Alkaloids are abundant throughout the family. Solanine, a glycoside that causes vomiting, headache, convulsions, and coma, is common in the genus *Solanum*, including the potato, where it occurs in all parts of the plant except the tubers. Mild solanine poisonings may be fairly common, usually misdiagnosed as bacterial indigestion.

The first alert is a tingling of the lips.

The real rogue's gallery are the solanaceous genera that contain the tropane alkaloids scopolamine, hyoscyamine, and atropine. These include jimson weed (*Datura* spp.), the tree datura, or angel's trumpet (*Brugmansia* spp.); belladonna, or deadly nightshade (*Atropa belladonna*); henbane (*Hyoscyamous niger*); mandrake (*Mandragora officinarum*); and the cup-of-gold plant, kiéri (*Solandra* spp.). "Tropane" refers to the class of alkaloids built around a peculiar seven-carbon ring with a nitrogen bridge over the center. Scopolamine has an extra bridge (an oxygen bridge) next to the nitrogen bridge. Cocaine, from the Erythroxylaceae, is also a tropane, but otherwise the tropanes are limited to the Solanaceae.

The belladonna alkaloids are anticholinergic: they block the action of acetylcholine. They are also called antimuscarinic, or "parasympathetic post-ganglionic



BELLADONNA, LEHNER

blocking agents." The three main actions are the mydriatic effect, dilation of the pupil; the antispasmodic effect, lowering the tone of the gastrointestinal tract; and the antisecretory effect, reducing perspiration and salivation. Strangury (slow and painful urination) is also common.

Atropine competes with acetylcholine for the muscarinic receptors. Because the sympathetic and the parasympathetic systems are enmeshed in complex feedback loops, the pharmacological effects of the belladonna alkaloids can be opposite at different dosages, and also biphasic. Low doses of scopolamine cause cardiac slowing, while higher doses cause cardiac acceleration, which then may return to normal after thirty minutes. At any dose, "they change the heart," which, if understood both literally and figuratively, could be a signature for the power ally.

Atropine is racemic hyoscyamine. Since the peripheral activity is all from the levorotatory form, (–)-hyoscyamine, hyoscyamine is twice as active as atropine, peripherally. Effects on the central nervous system, while weak compared to scopolamine, seem to be the same for both isomers. Centrally, scopolamine is a sedative, causing drowsiness, amnesia, and depressing REM dreaming. At high doses, and idiosyncratically, scopolamine may be centrally excitatory, creating restlessness and hallucinations. Confusion seems to be correlated to dose more linearly. Hyoscyamine and atropine lack the central effects of scopolamine except at high doses, being centrally stimulating (in a technical sense).

A regular witch's brew, one might say.

Class *Daimonica.*

Sometimes they are called deliriants. These are the plants that deserve to be called "hallucinogens," the term somewhat inappropriately applied to the phantasticants.

In his book *Natural Magick*, published in 1558, Giambattista della Porta (called John Baptiste Porta in English) included a number of recipes both for sleeping potions and madness potions, using stramonium (*Datura*), belladonna, and henbane. *Natural Magick* was an immediate best-seller, and was quickly translated into half a dozen languages, including Arabic. Porta was the founder of the Otiosi, the "Men of Leisure," the first scientific society and a model for the later Lynx Society and the Royal Academy. To be a member of the Otiosi, one had to have made at least one original contribution to science.

> *To make a Man out of his senses for a day.*
>
> *After these Medicines to cause sleep, we will speak of those which make men mad; the business is almost the same: for the same Plants that induce sleep, if they be taken in a larger proportion, do cause madness. But we will not tell those things which breed it for ever, only which may make us sport for a day, and afterwards leave no harm.*
>
> *—John Baptiste Porta*

Porta describes recipes and effects for potions of mandrake, stramonium, and belladonna, one of which will make a man believe he has changed into "a Bird or Beast." Porta, who must have been a challenging roommate, wrote that when he was young he tried these things on his "chamber-fellows," and describes how one, who thought he was a fish, tried to swim on the ground, and how another thought he was a goose and would eat grass and try to flap his wings.

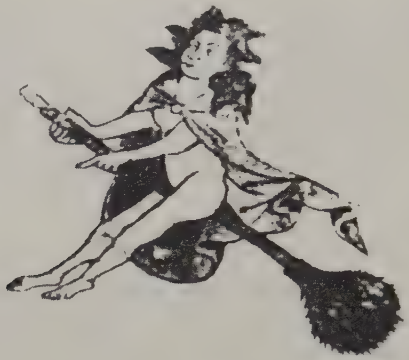
Some of Porta's recipes are clearly based on his reading of Theophrastus, Aristotle's pupil:

> *Three-twentieths of an ounce in weight is given, if the patient is to become merely sportive and to think himself a fine fellow; twice this dose if he is to go mad outright and have delusions; thrice the dose, if he is to be permanently insane; (and then they say that the juice of centaury is mixed with it); four times the dose is given if the man is to be killed.*
>
> *—Theophrastus, on Datura stramonium*

The different plants contain different mixtures of tropane alkaloids. *Brugmansia* probably has the highest ratio of scopolamine, followed by *Datura*. In *Hyoscyamous niger* scopolamine predominates over hyoscyamine and atropine in young plants, while the reverse is true in older plants, and the same is more or less true for *Atropa belladonna*. *Mandragora officinarum* has the highest percentage of hyoscyamine, along with its other distinctive alkaloids. The seed and roots of *Datura* (and the other plants are similar), average 0.2 to 0.8 percent total alkaloids. If a *Datura* seed weighs 5.7 milligrams, one hundred seeds could hold 1 to 5 mg of alkaloids. A "therapeutic" dose of atropine in 0.5 to 1.0 mg. A "low" dose of scopolamine is 0.1 to 0.2 mg. Ten milligrams of atropine can be fatal to a child.

> *Sometimes we give atropine to lessen the death rattle.*
>
> *—Hospice worker*

All of the tropane plants were major ingredients in various "flying ointments," along with sundry other dangerous and nefarious substances such as water hemlock (*Cicuta virosa*), hemlock (*Conium maculatum*), monkshood (*Aconitum napellus*), opium poppy (*Papaver somniferum*), soot, baby's fat, bat's blood, and poplar (*Populus* spp.). By the fifteenth century a number of learned and scientifically-inclined men, including Porta, had observed and written about the effects of flying



FLYING OINTMENT

ointments. According to Duerr (1985), the Inquisition was notably uninterested in flying ointments—they were, in their way, looking for "actual" appearances of Satan, not the drug-induced hallucinations of peasants. But most of the witchcraft accusations were tried in local civil courts, and possession or use of plants associated with "witches" was at the least highly suspicious. Still, by far the majority of the thousands and thousands of witchcraft trials had nothing to do with plants or flying or herb lore or goddess-religion. Witch accusations had to do with sour milk, infertility, failed crops, and the nastiness of poverty.

Jimson Weed *Datura stramonium, D. innoxia, D. metel,* and spp. Thorn apple. Toloache.

The Song of Toloache

> *I am Jonah. My sister had been gathering mussels on the coast and she had seen a ship with sails. We thought they only existed in old stories, like the story of the white people and the horses. We'd heard that story from the Valley People. Since they had told us that story, we thought that we should tell them about the ship with sails, and I decided to go along with my sister and my mother's brother on their journey north. We hiked through Gaviota Pass and up through the place where all the acorns grow. After that the country became drier. By the time we crossed the Sisquoc there was toloache everywhere, and we saw our first pronghorn.*

I am SO THIRSTY

●

SAN JOSE MERCURY NEWS, MAY 17, 1993

4 YOUTHS HOSPITALIZED FROM POISONOUS BREW

FOUR TEEN-AGERS WHO DRANK TEA MADE FROM POISONOUS JIMSON WEED WERE HOSPITALIZED AFTER SUFFERING MUSCLE SPASMS AND HALLUCINATIONS BEFORE BECOMING UNCONSCIOUS.

There is a great mystique surrounding *Datura*. Just how much mystique depends some on where you grow up. An old friend from Barstow, in the Mojave desert, told me, "Yeah, I once beat a guy up who sold me datura for marijuana."

Some of the mystique is just from the fragrance and pungency of the plant and the seductive curls of the flowers.

Georgia O'Keefe. Zuni rain priests.

Some of the mystique, and surely no small number of poisonings, is due to Carlos Castaneda's story about changing into a crow under jimson weed. Rumor has it that much of Carlos's creations were based on ideas and visions he got while on LSD in Zihuatenejo. In any case, he certainly embraced Coyote as his ally (one thinks of Clifford Irving). And creating a world out of a vision, a world that others may enter and walk through, is no small achievement.

Yeah, but what if some of it was just. . . imagination?

The Song of Toloache

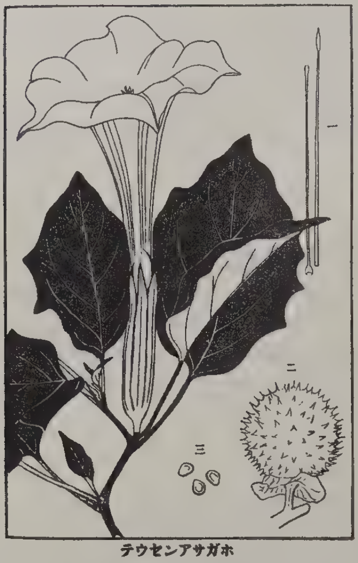
Mother's Brother was bringing along a couple of soapstone pipes as gifts. The Valley People were still mad at him from when we beat them in the bone game. They said that he put toloache into their acorn mush so they'd play stupidly and not be able to guess or hide the bones well. Actually, he hadn't done that. All he'd done was to hide a root under their mat, but he didn't want any trouble.

My uncle thought that it was time for me to drink the toloache. My sister had already done that. She had a dream helper too, but she would never tell anyone who it was. We stopped at a place where we could dig out the yellow mineral that we used for pigment. Uncle helped me grind enough for a little pouchful, and he gave me some of the red hematite that he carried in his medicine bag. I made brushes from yucca fronds.

The Plant

Datura is used in puberty and initiation ceremonies by some tribes in California, the Southwest, and also in Africa. The earliest such report is probably that of Robert Beverly, writing about the "Wysoccan" beverage of the Indians of Virginia in 1705:

> *The choicest and briskest young men of the Town, and such only as have acquired some Treasure by their Travels and Hunting, are chosen out by the Rulers to be Huskanawed; and whoever refuses to undergo this Process, dare not remain among them. . . . The principal part of the business is to carry them into the Woods, and there keep them under confinement, and destitute of all Society, for several months; giving them no other sustenance, but the Infusion, or Decoction of some Poisonous Intoxicating Roots; by virtue of which Physick, and by the severity of the discipline, which they undergo, they become stark staring Mad: In which raving condition they are kept eighteen or twenty days. . . .*
>
> *The Indians pretend that this violent method of taking away the Memory is to release the Youth from all their Childish impressions, and from that strong partiality to persons and things, which is contracted before Reason comes to take place. They*



DATURA METEL L., CHINA

hope by this proceeding, to root out all the prepossessions and unreasonable prejudices which are fixt in the minds of Children. So that, when the Young men come to themselves again, their Reason may act freely, without being byass'd by the Cheats of Custom and Education.

—Robert Beverly, 1705,
The History and Present State of Virginia

Beverly goes on to describe what happened to a group of soldiers who accidentally cooked up a pot of "James Town Weed" for potherbs, which he says was "a very pleasant Comedy."

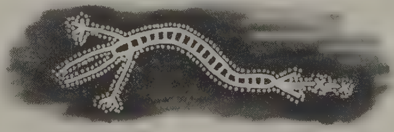
One would blow up a Feather in the air; another would dart Straws at it with much Fury; and another stark naked was sitting up in a Corner, like a Monkey, grinning and making Mows at them; a Fourth would fondly kiss, and paw his Companions, and snear in their Faces.

Beverly says that for their own protection the men were confined for eleven days.

Along the border of Mozambique and South Africa, the Tsonga use *Datura fatuosa* in girls' initiation ceremonies and for exorcism. After the ingestion of a decoction of *Datura* root, the ceremony is marked by dancing, rapid drumming, disrobing, and the invocation of an blue-green patterns of the ancestor spirits.

The Song of Toloache

My uncle knew where there was a spring up a canyon. There were big sandstone outcrops partway up the side of the canyon, with paintings on them. That's where they left me. Mother's brother prepared the toloache. He was a man with power and had several dream helpers. He was a famous gambler and that's where he proved his power, in the bone game. He'd go on long power journeys to Devil's Heart Peak in the Sespe country, where the condors live. I'm pretty sure that one of his dream helpers was Falcon. I was hoping for Water. I wanted to be a healer.



The Plant

The Chumash and other tribes in South-Central California seek power from a "dream helper," and sometimes a decoction of *Datura* root is drunk for this purpose. Not surprisingly, the first gift of a dream helper is a song. Some dream helpers are considered more powerful than others, but such judgements vary between different tribes and different individuals. Among the Kitanemuk, Hummingbird is stronger than Bear or Hawk. Likewise, some helpers are more likely to possess shamanistic powers. Having a dream helper is not is not the same thing as being a shaman—ordinary people also need and benefit from dream helpers.

> *Falcon is good for gamblers, Water for healers, Owl for shamans, and Eagle for chiefs. Yellow-jacket can help one shoot arrows straight. Frog and Otter can make one a good swimmer. Bobcat, Elk, and Mountain Lion can confer prowess in hunting. Hummingbird is said to grant courage, and Roadrunner can help midwives. Rattlesnake and Skunk are for poisoners, and we all know Porcupine.*
> *Coyote is for clowns.*

The dream helpers come from the First World, which existed before the First People became all the plants and animals that we know today. Since the dream helpers are supernatural, and from the other world, one usually has to get away from this world to find them.

> *Supernatural power is generally least accessible at the safer, more familiar and domestic pole, and most accessible in those times, places, and conditions which show a symbolic reversal of the ordinary human condition. Both in seeking power and in maintaining it, the individual has to move away from the mundane and domestic. Power is sought most successfully and used most effectively at night, in winter, away from the village, through contact with water, and through song and fasting.*
>
> *—Richard B. Applegate, ʔAtishwin: The Dream Helper in South-Central*

Sometimes a dream helper may come in an ordinary dream, at night. This is said to be especially true for shamans.

> *Among the Tubatulabal, as well as the neighboring Kawaiisu, the shaman's powers are foreordained in dreams during childhood, while ordinary individuals have to seek power for themselves. Common people rely heavily on Datura, which plays only a marginal role in the acquisition of shamanistic power.*
>
> *—Applegate, 1978*

Of course, accepting a dream helper is not obligatory. There are, after all, responsibilities involved. And power has its own pitfalls.

> *Power is a dangerously amoral force; the possessor of power can choose to use it for good or evil ends. For example, the power to cure or to cause rain necessarily implies a corresponding power to cause illness and drought. . . . And even if the human possessor of great power does not become overtly arrogant or antisocial, as is sometimes the case, a reputation for power could elicit the enmity of shamans and accusations of witchcraft and consequent revenge by non-shamans. Despite the concomitant dangers, the average south-central Californian seeks power as a means of exercising some control over an unpredictable and often hostile world; if not control, then at least he seeks some security. Power is dangerous, but not having it is far more dangerous.*
>
> *—Applegate, 1978*

The Chumash use the "female" plant. The root is cooked to a thick consistency and then dried. The dried sheet is cut up and chewed. (You have to learn from them how to distinguish the genders.)

Datura has long been a favorite plant of muggers. An extraction of the seeds or root is added to the victim's drink, like slipping someone a "Micky Finn." The United States Army, in their MK-ULTRA program, investigated *Datura* extracts (along with LSD and many other drugs) as an aid to coercive interrogation.

> *The Poisoners all belong to one caste, of Pasie, or dealers in toddy: they go singly or in gangs, haunting the travellers' resting-places, where they drop half a rupee weight of pounded or whole Datura seeds into his food, producing a twenty-hours' intoxication, during which he is robbed, and left to recover or sink under the stupefying effects of the narcotic.*
>
> —*Sir Joseph Hooker, Himalayan Journals, 1855*

A young man named Hamed, in a story called "The Datura Trees" by Mohammed Mrabet and translated by Paul Bowles, buggers a visitor who had insulted him after knocking him out with *Datura* coffee.

A cult of Kali-worshippers in India called the Thugs, or Thuggees, used *Datura* to stupefy their victims before strangling them. The corpses were offered to Kali and the victims possessions divided between the Thugs and local officials. Wealthy travelers were the preferred targets. The British decided to stamp out the cult in 1830, and Sir William Sleeman arrested about three thousand persons, and got 483 of them to give evidence against the rest. About four hundred of them were hung. Some say it was more of a witch hunt. The existence of the Thugs had been known at least since the thirteenth century. Membership was mostly hereditary, and included both Hindus and Moslems. The British estimated that they may have killed 40,000 victims a year.

Datura may be the single most dangerous visionary plant in North America. Well, maybe after tobacco. Even among very experienced groups, like the Chumash, there were said to be occasional fatalities. Maybe oleander and castor bean are more toxic, but nobody eats them purposely. Children are poisoned by toxic berries, whole families are carried off by poisonous mushrooms, but *Datura* may be the principal poisoner of teenagers.

> *"They said they didn't have money for drugs so they went down the street and picked these flowers," Officer Caraway said.*

The biggest problem is dosage: there are no reliable recipes. Mostly that is because there is so much variability in the plant. Fifteen seeds are *usually* safe. "A thumb's length of root" may hit that in-between zone where you still have some wits about you, but it may also be enough to bring on coma. Compounding the problem of dosage, a small percentage of people have metabolisms that are at least an order of magnitude more sensitive to tropane alkaloids than the normal population. And it's not the kind of experience many like to repeat, though there are occasional exceptions. The few aficionados that I know grow their own plants, so they get to know them, and use light doses. Well, not *always* light doses.

> *One of the strangest things is that people that I was talking to would just disappear. I remember thinking at the time that it seemed a little strange. . .*

And where did all that stuff I already wrote into this chapter disappear to?

> *I am SO THIRSTY.*

The easiest way to get to know the plant is to smoke it. I don't know of any fatalities from smoking *Datura*, though it is synergistic with *Cannabis* and if you smoke a *lot* of *Datura* you can achieve the same derangement that you can from eating it. It is characteristic of *Datura* and her sisters that they can sneak up on you and steal your mind and *you don't even know*. Hallucinating madly, and not even knowing. *Datura* could be a symbol for what the Hindu and Buddhist yogis call "the nature of reality."

> *And actually, come to think of it, Shiva carries a Datura flower.*

The Huichol, well-known as peyote people, also recognize a path to becoming a shaman with *kiéri*, who manifests himself in the solanaceous plant *Solandra. Solandra*, one species of which is the Cup-of-Gold grown as an ornamental, contains tropane alkaloids. Sometimes kiéri is also *Datura*, or *Brugmansia*. One Huichol man learned to play the violin from kiéri. Some Huichols say that the kiéri path is shorter than the peyote path. The kiéri path has to do with working with the plant, with leaving tobacco offerings at the base of one particular plant, or with keeping a piece of the plant near one, not with ingesting the plant. According to anthropologist Bret Blosser, the Huichol say that eating the plant will make you crazy. Bret added that there was one Huichol who did eat the plant, "but he was kind of crazy."

A young woman named Star led her Earth Tribe on a *Datura* trip. Except that Star, like all of her companions, while well-experienced with psychedelics, had no familiarity with jimson weed. They were all country kids, too, raised in the mountains. And with names like Star and Rainbow they should have known better. They weren't that far from home but at least one got lost and needed helicopter rescue and I think maybe a fire was involved.

Jimson weed trippers frequently start fires. They get chills so they build a fire and then they just wander away and they just built the fire in the pine needles anyway without clearing anything and then there's a fire.

Or maybe someone starts banging his head against a log and he just keeps doing it until his head is bleeding.

And then once in a while somebody dies.

> *The youth had evidently eaten Datura. He was pronounced dead at the hospital.*

The good news is that *Datura* is legal.

> *Yeah, Baby!*

* * *

The Song of Toloache

The creatures on the rock began to move. They were crawling around and talking to each other. There were condors and centipedes and things I had never seen before. I could see a place on the rock where the ocean was. I painted an orca in the ocean so that it would swallow the ship with sails if it came back again. I didn't think that this ship with sails was a good thing for us.

Much of the art of working with *Datura* is what I call *dimensional smuggling,* learning how to bring the knowledge back to your waking state,. Maybe you are dreaming. Maybe you have drunk some *Datura*, or maybe you are just dreaming, or maybe, as the Chumash also do, you have fasted and swallowed live ants—the cases are the same. It's always a question of going further, and maybe not being able to remember what you have already seen, or waking up and maybe not being able to get back to where you are. You have to learn this for yourself. The Chumash say that you should get up and walk at least a hundred feet from your house. Then address the dream helper by name.

Tobacco is useful for getting back into your dream so you can explore further.

* * *

Angel's Trumpet

Brugmansia spp., *guanto.*

Rocio's Ally

You will spend a day in the future.

Don Jaime and his wife cut the *Brugmansia* branches into short pieces and split them. They scraped all the pith into a bowl, and then squeezed the juice out of the pith with their hands. He measured the dose in a little pill cylinder: up to the moon of the thumb. Rocio told us that "we would spend a day in the future" and we drank. I didn't like it very much but I'm not sure why. Maybe I was nervous or maybe I don't like the future. Body stuff. A little stuporous. And it didn't seem like I was high, but I wasn't normal either, just something twisted about my brain. The experience was mostly acoustic—my eyes were open but my ears were even more open and that was a much larger space. It was raining hard and I wandered out into the sound of the rain. I must have been there a long time because the whole day went by. The rain must have had something to say but I don't remember a lot except that there were intricate patterns in the noise of the raindrops on the roof and on the canopy and all the other sound of a wet tropical forest. When I finally got up and tried to walk I could but it took some care to stay balanced. Otherwise I don't remember very much.

I seem to have fewer field notes for the tropanes than for any other group of plants. Where DID that day go?

Daniel Schulke calls the tropanes *chronophagoi*, "time-eaters":

> *There'll be a page missing from the Book of Days.*

All the nightshades are given to Saturn.

When it got dark there were stars around the light bulbs. I still couldn't read even the next day.

Gabe ate three *Brugmansia* flowers and went to a party, but said that three was too much. His brother had been with him and was able to take care of him and keep him out of fights, but he didn't want to repeat the experience.

> *Dosage. That's always been the tricky part.*

Which is why the Chumash only used datura in the winter—always at the same time of year so that the root would have about the same strength.

Brugmansia is also called "tree datura." They are native to the Andes, but have been cultivated for so long that that they are considered cultivars and are rarely, if ever, found in the wild. It is a spectacular plant with powerfully fragrant blossoms, and is a favorite of many poison gardeners. There are several species, and a number of hybrids. The long cone-shaped flowers are pendulous or nodding, white or yellow or apricot. One species, *B. sanguinea*, has red flowers, and is particularly high in alkaloids.

Among one group of Indians on the eastern slope of the Andes in Ecuador, *guanto* is only drunk once or twice in a person's lifetime, at an important crossroad of change or decision. The services of a shaman are not employed. The drinker first builds a small shelter in the forest, and then makes arrangements with friends and relatives to take turns watching over him, so that he won't injure himself. The ordeal may last several days.

Brugmansia is also an occasional admixture to ayahuasca, which some report to be pleasant.

Some friends had an orange *Brugmansia*, brought back by an ethnobotanist from Oaxaca, planted next to their hot tub. The plant loved it, and at night two to three hundred flowers would all be open and looking at you and emitting their little packets of fragrance.

> *"One could swoon."*

Many people like to bring a flower or two into the bedroom, for dreaming. Susan said that a whole bouquet was too much, prompting a visit from the "demon lover."

Black Henbane

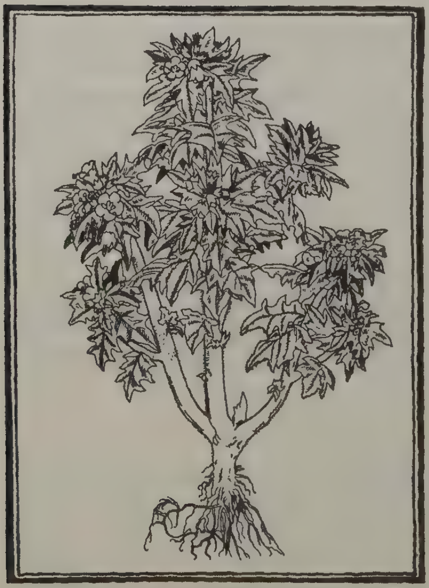
Hyoscyamous niger.

> *The flower of offal, growing on human refuse and corpses, called "Goat's Joy" in Sanskrit, and "Insana."*

Henbane, *Hyoscyamous niger*, is a pungent annual or biennial herb with pale bell-shaped flowers. Like its cousins, henbane contains the tropane alkaloids scopolamine, hyoscyamine, and atropine. Comparisons of the effects of henbane with those of belladonna, mandrake, and the daturas is the province of a very small band of nightshade aficionados, mostly dedicated and practicing pagans. In Europe and Scandinavia, henbane was used as a beer additive until fairly recently. Actually, adventurous home-brewers still make henbane beer. Christian Rätsch's recipe calls for forty grams of dried leaf to 23 liters of water. Rätsch warns not to have any more of the brew on hand than can safely be drunk without overdosing on the henbane, because henbane beer creates its own thirst and once you start, anything around will be drunk.

> *Henbane beer has a lovely reddish color. It's quite good if made by a skilled brewer. I don't remember any profound perceptual changes, except for hints of halos around the lights, sparkly and diffused. It was a very pleasant, and rather a talkative and social beverage.*

If you drink too much, everything will look reddish for two days.



BLACK HENBANE

Stories I hear about henbane often have a "wrongness" to them—somehow they don't quite add up. The effects described often go far beyond what might be explained by the pharmacology of the quantity of alkaloids involved. One man, who inhaled the fumes from roasting henbane seeds in a brazier, was schizoid for a month (actually, maybe he's still that way a little). The difference between smoking belladonna or datura and ingesting them is so pronounced that I would have expected the same from henbane seeds. But my friend's experience is not the only account of the toxic efficacy of henbane smoke, James Duke (1985) also states that "convulsions and mania have resulted from smoking the leaves." The old-fashioned antidote is morphine.

Schulke called burning henbane capsules "the worst smelling of any of the nightshades."

> *Burning hair. Maybe a little burning skin.*

Some think that the seeds burned by the Scythians, described by Herodotus, were henbane rather then *Cannabis*. Several authors mention that henbane seeds were burned in medieval bathhouses. Rätsch (no surprise to his friends) emphasizes the aphrodisiacal properties of the smoke, and suggests that the moralistic detractors who claimed that the public baths were more about licentiousness than hygiene may have been correct. On the other hand, the purpose of burning henbane seeds around the baths may have been wholly apotropaic—to keep away disease-carrying vapours and spirits. The purported ability of henbane to promote venery could be easily tested in a sauna—one could just put the seeds on the stove—and I am hoping that my pagan friends will report back to me. (Though they are already so dedicated to polyamory that it might be hard to find a "control case.")

> *"Somehow I had crawled out to the garden. I don't remember how or when. I felt reptilian—that I had claws and scales. I could feel the sun warming my body."*

Henbane has been used as a soporific and as an anodyne for pain relief for millennia, and as an anesthetic for surgery. Another nightshade, *Scopolia*, also contains tropane alkaloids and was used in Lithuania and the Balkans similarly to henbane.

Gustav Schenk, in his delightful *Book of Poisons*, describes a self-experiment with black henbane seeds.

> *I once took the opportunity of gaining that understanding of the nature of a plant which comes only by experiencing the effects of its active principle on oneself. I was still a young man at the time and my action was a trifle reckless; nevertheless, I was on the right lines.*
>
> *—Gustav Schenk*

Schenk placed a handful of henbane seeds on an iron plate and heated the plate with an alcohol lamp and inhaled the smoke from the smoldering seeds.

> *The ears become deaf, the eyes almost blind; they see in a haze only the bulk of objects, whose contours are blurred. The sufferer is slowly cut off from the outside world and sinks irretrievably into himself and his own inner world.*
>
> *—Schenk*

Schenk describes how, while still staring at the charred seeds, he couldn't figure out what had happened to him. It's like the ally erases her footprints, along with anything else in short-term memory.

> *Although I could hardly walk or even stand up, I was seized by a raging impulse to move. Since my feet seemed firmly welded to the floor, I could only clutch and grasp at things with my hands and tear them to pieces. . . . There were animals, which looked at me keenly with contorted grimaces and staring, terrified eyes; there were flying stones and clouds of mist, all sweeping along in the same direction. . . . Fluid formless creatures emerged from the darkness. I heard words, but they were all wrong and nonsensical, and yet they possessed for me some hidden meaning. . . . My head was growing independently larger, and I was seized with the fear that I was falling apart. At the same time I experienced an intoxicating sensation of flying.*
>
> *—Schenk*

Some people would come down after twelve hours, others not for three days.

> *A few never returned.*

Hyoscyamine and scopolamine are the principal alkaloids, with hyoscyamine usually present in larger quantities than the scopolamine. Hyoscyamine (technically *l*-hyoscyamine) racemizes into atropine (*dl*-hyoscyamine) by drying according to Rätsch. Boiling probably does the same thing.

> *I put two grams of seeds into a brazier, and inhaled them over several minutes while they smoked and charred. The first effect was a brightening of the sunlight. I felt like there was a hand against the back of my skull. I felt light-headed, a little uncentered, and a little stupid.*

Scopolamine, as a cream rubbed behind the ears, is a very effective protection against seasickness. As scopolamine is the most centrally active of the of the belladonna alkaloids, poison wizards, seeking mental over bodily effects, look for plants high in scopolamine and lower in atropine. Those seeking the more somatic effects might choose to work with mandrake, or belladonna.

> *I came up behind her and put my arms around her and cupped her breasts and pulled her against me. "From the neck down everything's working fine," I said.*

All of the tropanes are friendly with tobacco.

* * *

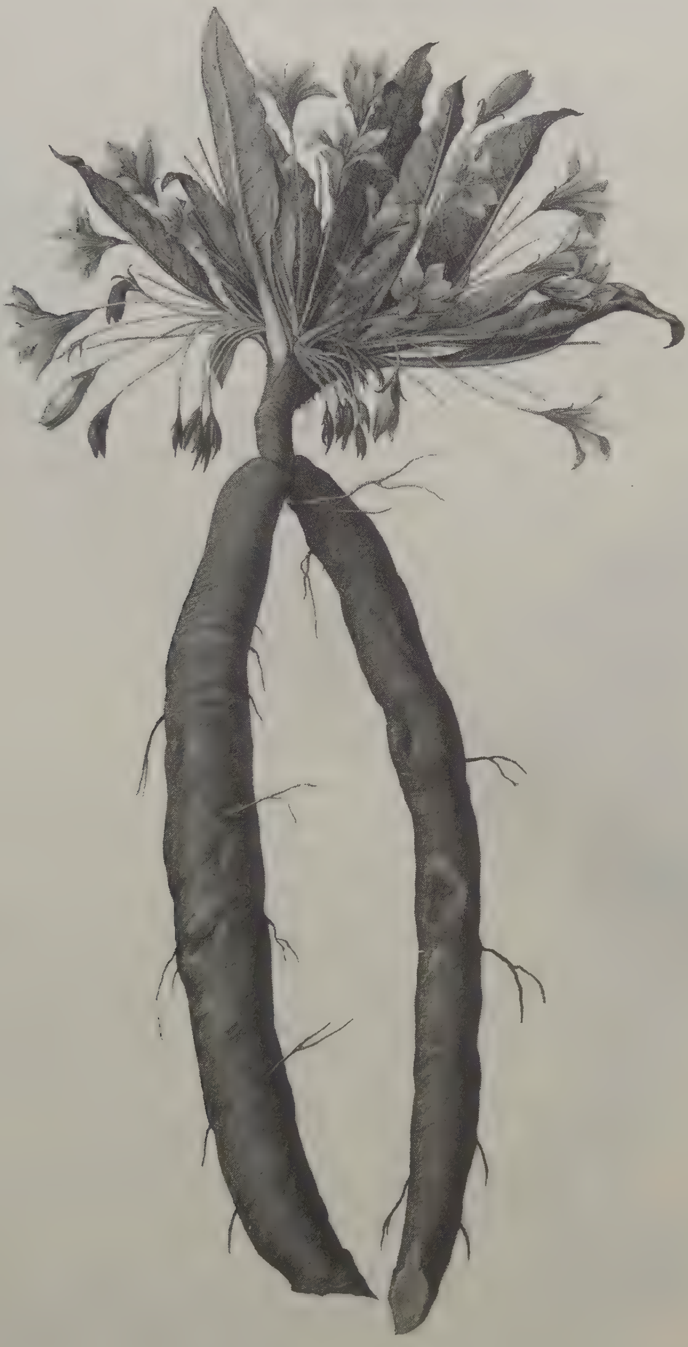
Mandrake *Mandragora officinarum.*

> *There I shall give you my love,*
> *when the mandrakes yield their perfume.*
>
> —*Song of Solomon, 7:12, 13*

In Genesis, Rachel trades Jacob to Leah for a night in exchange for some mandrake root, that she might conceive. The Hebrew word for mandrake is *dûday* (דּוּדַי), from *dûwd*, a pot or cauldron, from a root probably meaning "to boil," and thus, by analogy, "to love," or "love object." In the King James Bible mandrake is translated as "love apples."

> *The place of the scapegoat, the dusty wilderness of Azazel.*

Mandrake is a Mediterranean plant, where it grows wild. In Europe it generally occurs under cultivation. It was known to the Egyptians, and Ra prepared mandrake beer to serve to Hathor, to keep her subdued so that she wouldn't go on killing all the people on earth. The Greeks knew mandrake well, sometimes calling it "Circe's plant," and it would be a most suitable candidate for turning men into swine. Hesychius states that *Mandragoritis* was an epithet of Aphrodite.

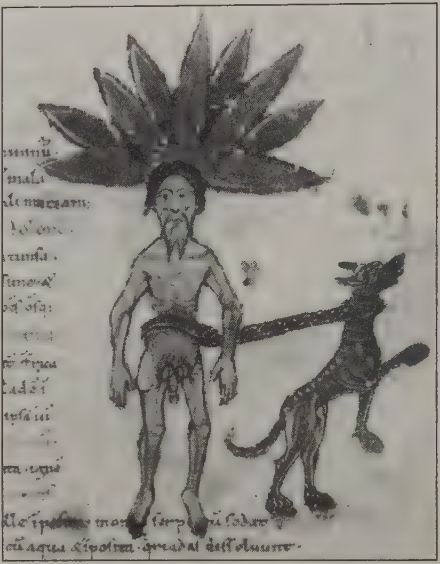


MANDRAKE, JACOPO, CA. 1480

A hypnotic fruit that brings oblivion.

—Suidas

Mandrake was usually extracted in wine, and this wine may have been quite common. Sour wine would be an especially good solvent. Theophrastus, in his *History of Plants*, ca. 230 BCE, was the first to record the elaborate rituals performed by the *rhizotomists* (the "root-cutters") when gathering the plant. First, three circles were inscribed on the ground around the plant, then the first cut was made while facing west and speaking as many words related to the mysteries of love as one could think of. As Hansen notes, in *The Witch's Garden*, "it is a well-known fact that demons take fright and disappear if only one behaves lewdly enough." Theophrastus added that he didn't believe the hocus-pocus himself. In the Middle Ages mandrakes had to be pulled from the earth by a dog, and the plants were said to shriek when uprooted.



MANDRAKE & DOG, 1431

> *People who grow mandrake say that it moves, that the plant changes location, and that to harvest the plant one must stalk it—as on all fours—to sneak up on it. Magical orders would first fashion a metal crown, and encircle the plant with the crown to contain its energies.*

There is a lost Greek comedy by Alexis titled "Women Drugged on Mandrake." A better translation might be "Women Raging on Mandrake," the Greek word being *mandragorizomenē (μανδρᾰγόριζομένη)*. That it was a comedy means that mandrake use was part of folk culture and that everyone was familiar with it. It is a pity that no substantial portions of the play survive.

I can think of no other plant more suitable to Maenadism and the Dionysian revels.

> *There was a night at Burning Man when we took mandrake. She was my date and everything but that night I could have been anybody.*

Julius Caesar once escaped from pirates who had captured him by promising them double the ransom they were asking, and then sealing the deal with a party at which he served mandrake wine. Hannibal won a battle in Africa by faking a retreat, leaving behind jars of mandrake wine, and then falling upon his stupefied enemies after they had drunk his gifts.

"Soldier," said the eldest of the Twelve Princesses, "would you like a glass of this sweet, scented wine?"

Nicholas Culpepper, the famous herbalist, claims Macbeth defeated the Norwegians in like manner, by giving the Norwegians wine spiked with "sleepy nightshade." Macbeth later became king of Scotland by killing Duncan—on the battlefield, though, not as Shakespeare has it.

According to Dioscorides, the resemblance of the root to the human form was noted by Pythagoras. However, if, as Hugo Rayner believes (Rayner, 1971), *mandragora* is derived from the Persian *mardum-giâ*, "man-plant," the association is much older. Throughout Europe and the Middle East mandrake roots are carved into talismans called mannikens. One of the charges against Joan of Arc was that she wore a manniken between her breasts. Daniel Schulke reports that in the Richel collection at the Museum of Witchcraft in Cornwall, there are dozens of hand-carved little coffins, each with a carved mandrake root inside.

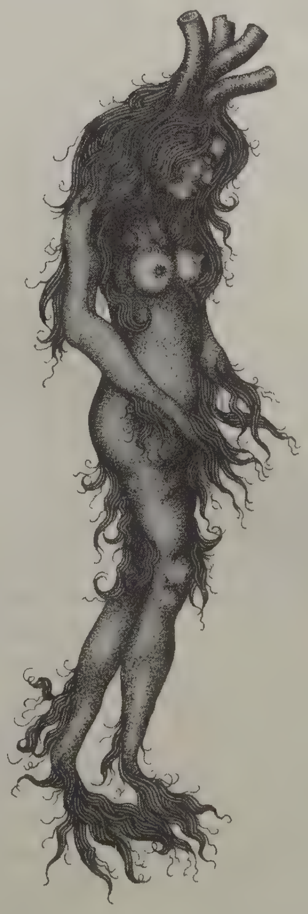
Mandrake was said to grow beneath gallows, from the semen ejaculated by a hanged man. In 1630 three women were put to death in Hamburg for possession of mandrake roots.

How about a glass of mandrake?

According to St. Hildegard, mandrake is a cure for depression and lovesickness, a property first noted by Hippocrates. Von Bingen considered mandrake hot and dry, and said that it was formed from the earth from which Adam was made. As had many herbalists before her, she recognized two kinds of mandrake, a male form and a female form. If a man could not restrain his uncouthness, or hot desires, and thus succumbed to spiritual backsliding, Hildegard recommended taking the female root, and contrariwise for a woman.

•

The mandrake lies in the earth like the pagan philosophers in Hell, awaiting the Savior to redeem them.



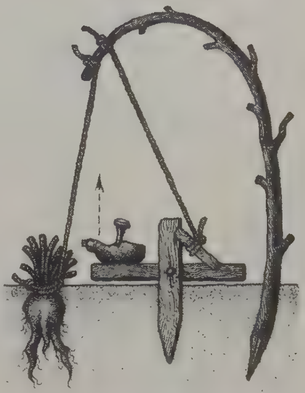
WOMANDRAKE, RICHEL COLL.

Thus I drank mandrake:

> *O Hecate, who lives in the West; mistress of all ghosts and demons of the dead, mother of unquiet sleep and oppressive dream, quiet your dogs, this first draught I spill for you.*

Hell, it turned out, was a yellowish place, and pleasanter than I had imagined. I felt no urge to think, and didn't. This was a great relief.

It was very stimulating: gregarious and talkative. That was the first phase, the first glass, where everything was safe. With the second glass the plant took more control. Daniel remembers loss of short-term memory—not being able to remember what one had just said. And a glimpse at how the brew could be used as a love potion in a manipulative way, "All those good physical feelings and a person not really knowing what they were doing."



There was a third phase, the third glass. Daniel said he saw a pit full of insane people who called to him and told him to come in.

> *I decided I didn't want to be a burden on my hosts, and declined the third glass.*
>
> *—Schulke, personal communication*

Elephants are said to eat of mandrake, when they wish to copulate—the female first, who then offers the sweet-smelling fruits to the male.

Atropa belladonna.

Deadly Nightshade

Belladonna cigarettes, called "Asthmador," were available over-the counter until the 1970s. Smoking one didn't do very much, but eating one did a lot. People would be arrested by the police for wandering around without any clothes on. It was usually blamed on LSD, but was almost always Asthmador. Howard's story is typical:

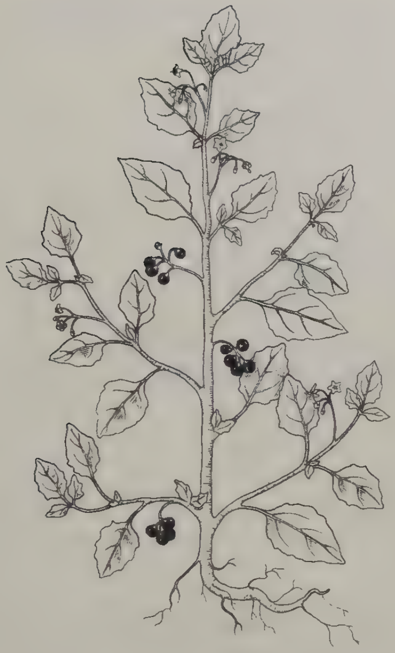
> *I was smoking a cigarette, and would leave it up in the air, as if there were an ash tray there. I remember thinking that it was odd that a cigarette could just hang in the air like that. Then I took another puff and put it back up there.*
>
> *At one point I went upstairs to take a shower. My brother, who was babysitting me came up and said that maybe I should take my clothes off first. 'Oh, right,' I said. I'm not sure if I ever got into the shower or not, but I got to thinking that I needed more cigarettes, so I decided to walk down to the store to get some. My brother stopped me at the door and asked me where I was going. I told him*

that I was going out for cigarettes. He asked me if I thought I should put some clothes on first. Right.

I remember walking through what I thought was a door and crashing into the wall and banging my head. 'That was stupid,' I thought. Then I did it again.

•

The characteristic signature of the intoxication is that there is no connection made between the general weirdness and that one has taken a drug. It's like a dream that is experienced as real. If you see a strange apparition, maybe a big telepathic sea lion creature with pustules all over its body you think "wow, I've never seen one of those before," and then go on doing whatever you were doing, which is probably picking bugs off of yourself.



BLACK NIGHTSHADE

Daniel is a master poisoner, specializing in the belladonna alkaloids. He is a high initiate in several esoteric orders, and the only person I know who has explored the arcane formulae of such dangerous plants as monkshood (*Aconitum napellus*), poison hemlock (*Conium maculatum*), and other members of these seldom explored families. We took eight drops of his belladonna tincture at Burning Man. I wasn't sure the dose was adequate: it didn't seem to do anything, though we all felt pleasant enough. Out on the Playa there was a whale contraption about twenty feet long. There was a man inside it and a naked woman dancing in front of it. The girl was doing the most seductive and beautiful moves I had ever seen, and the whale was responding, moving forward, twitching its tail, opening its mouth, all in time to the djembe drummers surrounding them. I was amazed at the lifelike movements of the whale—whatever they had used for the skin rippled and stretched seamlessly. I was trying to figure out the maze of controls and levers and ropes that must have been inside the whale for it to have been so completely natural in its movements. We were entranced and stayed there and followed it around. Sometimes the girl would dance right into the whale's mouth and other times she would tease it and the whale would thrash and lurch forward. It was a wonderful Burning Man night, not too cold. Actually I don't remember a whole lot more. But I happened to see the whale parked on the Playa the next day. It took me awhile to accept that it was the same creature I had been looking at the night before. For one, it was too small. And there was almost nothing to it—just some gray canvas on a metal frame with a bicycle inside. I think there was a lever to open the mouth, and maybe the tail part could move, but that was about it. The canvas was shabby-looking and torn at places and the angular frame underneath it was completely obvious.

Maybe it was the girl . . .

Daniel makes his belladonna tincture from the seeds. The fruit gives a better flavor, but the seeds area more consistent in strength. With strong doses you have to fight to stay out of trance:

> *"a somatic understanding of the hypnotic."*
>
> *Atropa, I bend my song to you.*

* * *

For the *Beautiful* Woman

An argument emerged among the philosophers, over Fate, said to be beyond even the power of Zeus to alter, and Tyche, Chance, later embodied as Fortuna. At issue was the matter of Free Will.

> *Atropos is the one who cuts the thread*

An argument developed. Athanasius maintained that one should worship the Creator, not the Creation. A contrary view was that the true way to honor the Creator was by honoring His Creations.

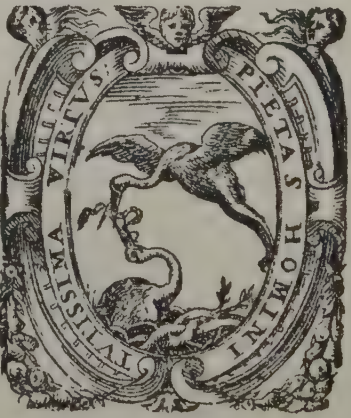
The Rational Cosmos, educated and enlightened, or, that lacking, accepted by Faith, was championed as a bulwark against superstition and all the mumbo-jumbo and chanted spells of the ignorant. To that end, spells were chanted and the catechism recited.

Then there were those who felt that Nature transcended mere theory, that each creature, plant, and mineral had an essence, a spirit, endowed therein Divinely. Thus Bruno concluded that some magic was good magic. For this he was burned.

Some said This World is the Devil's, and therefore bad, and the things of God wholly Other. Therefore the Wild was the Devil's World.

The Rational part was the Garden, enclosed and controlled. Out past the hedgerows was the untamed dark forest. The Wild was an untidy place, where demons lived— like the Land of Dreams, where one did those things which were forbidden.

The unlettered masses, as they always do when marginalized and impoverished, turned their frustrations on themselves. Villagers accused each other of witchcraft. Not that the Church didn't have a hand in it—they often did—but generally the Inquisition was more interested in the Brunos and the Galileos and rich Jews with



SEAL OF THE INQUISITION

property. Mostly, we accused each other. And we probably jeered and shouted as our neighbors were taken to the stake.

Some thought dreams had meaning. Some thought the gist and flow of the future tide could be sampled—that there were marks and signs in the present that foretold what would be. Some still think this. Some thought that, since God determined all things, to divine the Divine Intention was at the least immodest, at worst, Satanic.

Some thought that denigrating a Symbol was itself a high crime, but it's not clear if that is Rational. Some thought that speaking the name of a False God was a crime.

الحرف حجاب والحجاب حرف

"THE LETTER IS A VEIL AND THE VEIL IS A LETTER" —AL-NUFFARĪ (D. 965)

Some believed in Reason. Some, reasonably, believed in Signs. Some believed in some Signs but not others. Some thought it a crime to desecrate the Flag or to possess an Idol. One's personal library can still be used as evidence in court.

He owned a lot of books on drugs.

Some must have known that they lived in a dark time, and that it was the imprisonments and the burnings that were the crimes. Some knew but were hard-minded, that for the Greater Good, well, things must be done. Some still believe this.

During the Reformation and the Counter-Reformation everything got worse. Wars devastated the country. The leaders felt that matters of great importance were at stake and that extraordinary measures were justified.

It is written.

If there were pagan beliefs and practices in the countryside, they had nothing to do with the Classical Paganism of the Neoplatonists, with Roman gods or Mediterranean fertility cults. Whatever had survived in folk culture was surely indigenous.

The pharmacological properties of belladonna were well known to educated physicians. And from a handful of cases, we know that commoners experimented with them also. Greasing a broomstick with a belladonna flying ointment, and applying it between the legs would surely be effective—all the tropane alkaloids are readily absorbed transdermally. Beyond that the story gets more dreamlike. In one case a monk sat with a woman who claimed that she flew with the Devil after applying the unguent, in order to assure her that it was all a delusion and that she had never left the room. Others seemed to think that if one believed one were flying with the Devil, that was devilish enough. Most of the witchcraft trials, however, had nothing to do with psychotropic plants—the accusations, like they are everywhere in the world where such things occur, had to do with things like the evil eye or envy, with pettiness. Arthur Miller seems to have caught it close to the mark.

Some think the dark side of magical thought is a greater threat than Dead Reason. Some think Reason is an intriguing idea and ought to be tried, sometime.

According to Inquisitional guidelines, as outlined by Schulke, herbal knowledge itself could be an *indicium* of witchcraft. Merely gathering wild plants was suspicious enough for one to be placed on a watch list, or for one to be questioned. Sort of like today, when governmental agents may watch your mail for months, or even years, and arrest you if there are toadstools in any of your packages. A draconian law being proposed in Louisiana would make possession of almost any of the plants mentioned in this book a felony.

Some think Reason should be given a chance. Some think it reasonable to try to see what lies beyond Reason. Some think it is more important to stamp out Evil.

Some think there is only One God, others think there are Three. Some think there is One but that it is Everything. Some think there is No God, others think there may be gobs of them. Some think that "love your enemies" ought to extend to unbelievers. It may be important, somehow, that at least one person in the world believes this.

ON ELEMENTALS

There are so many things that we haven't covered. The field here is unbounded. However, some mention should be made of the "elementals," and it makes sense to begin with air. Air could make a hearty poem, in an odd way. Everybody knows about air, though it took some time for us to figure out its physics and chemistry. The metaphysics were more obvious.

Plato thought air composed of octahedrons, and from this deduced a prescient proposition about water: "Water, when divided by fire or by air, on re-forming, may become one part fire and two parts air." Mostly, for Plato, air seems to be an intermediate element—between fire and water.

Anaximenes thought air to be the primordial element—the basic stuff out of which, through its constant motion and transformation, everything else in the universe is composed:

> *Everything is created by the condensation and rarefication of air, but motion is eternally arising (*αίῶνος ὑπάρχειν*).*
>
> *—Anaximenes*

Nietzsche thought this the first statement of a scientific worldview, and much of Anaximenes was later adopted by the Stoics.

> *As our soul, being air, holds us together, so do breath and air surround the whole universe.*
>
> *—Anaximenes*

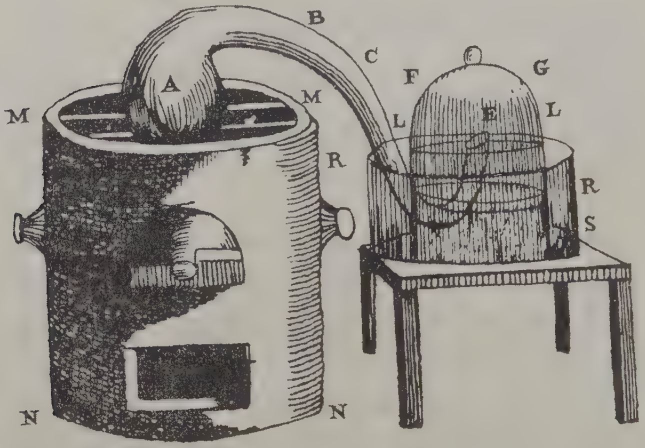
Air is breath and spirit. Spirit is life and soul. Soul is not different from the stuff of creation.

What was easiest to figure out was that we needed air, all the time. Ok, you can hold your breath, but not for very long. Air fasts are short-lived, one could say. Air is our first drug.

> *We'd hyperventilate and squeeze each other. If we did it just right we'd black out.*

A quart of air weighs 1/20 of an ounce.

It was recognized that there was fire in air. Lavoisier nailed it down to about one part in five and named it oxygen. Once a candle had used up all the oxygen in a bell jar, small animals placed in the jar quickly died and could not be resuscitated. Contrariwise, mice in an atmosphere of pure oxygen were livelier than mice in ordinary air, at least for awhile. Then they too would succumb, but could be revived. Oxygen needed to be tempered—it was too vitally rich. The temper was named nitrogen. Lavoisier was engaged in an experiment weighing all the products of respiration—his assistant was in a hermetically sealed bag except for an opening around the mouth—everything his assistant breathed out went into various flasks and all of it was going to be carefully weighed—when Marat sent him a summons. One of Lavoisier's greatest contributions, in addition to his meticulous quantitative methodology, was a radical cleanup of chemical nomenclature.



LAVOISIER'S OXYGEN APPARATUS

The composition of the atmosphere has significantly changed through the earth's history.

> *Naturalist Peter Warshall tells a wonderful story about the color of the earth. As the earth cooled and began recovering from massive meteoric impacts, sulfur and other anaerobic bacteria thrived. Little, if anything, lived on land. The anaerobic bacteria grabbed the high-flux central part of the spectrum—that left the oceans a deep purple. As chloroplast bacteria evolved to glean the leavings on the spectral edges, they emitted oxygen. With the rise in atmospheric oxygen, the ferrous iron dissolved in the oceans precipitated as red ferric oxide, and the oceans turned green. Eukaryotic multicellular lifeforms brought the plants into equilibrium and the oceans turned blue, the green moving to the land.*

For the physically minded, the nature of the composition of air goes back to Leucippus and Democritus, and somewhat more recently to the observations of a botanist named Robert Browning. Michel Serres outlines the contributions of Lucretius in this matter, along with those of Archimedes. "Chance" entered the discussion early on.

> *Chance Encounters (with) the God(s)*
>
> *The MATTER seems to have to do with the tension between Number and Chance. Number is the orderly banquet, the laid table (and, ultimately (we might say), monotheism), and Chance is the uninvited guest, the stranger at the door whose other name is Dionysus.*
>
> *The clinamen is angle, or phase shift, the V of Venus. It is the fluxion, the smallest separation of curve and tangent, and thus noise: the parasite, or the pharmakon.*

Air has to do with turbulence, where determinism explodes into possibility, like a maze of crisscrossing deer trails, all used but beyond prediction.

> *There remains a repetition of the same [même], which is the general as such [même]. And thus a deception in other circumstances. In the absence of a philosophy of circumstance, there is no choice but to go back to bricolage. It is the forced localization of method. The latter is a path, virtually global. Bricolage is the ensemble of operations that the general cannot perform. In short, it apprehends the specific. Now, again, what is specificity? It is a medicine, for the treatment of a particular disorder, to the exclusion of all others. Applied elsewhere, in other circumstances, it is no longer a remedy and may be a poison, or else neutral. The traditional double meaning of the Greek word* φαρμακον, *phármakon, beneficial or harmful drug, exactly matches specificity. Or the exclusion of* φαρμακος, *phármakos, not of a third, but of a singleton of the whole. There is a crisis, one says: in the social group, in the text, in knowledge. But what is in crisis is the idea of the general, of the presumption to the universal. What trembles and threatens to break is none other than the bridge thrown from the global to the local and vice versa, that is to say classical knowledge and the will to power. The text of the law.*
>
> *—Michel Serres, The Birth of Physics*

Browning observed, using a microscope, that pollen grains in a drop of water bounced around. To prove that the motions were not due to tiny life forms, Browning managed to find a piece of quartz with a minuscule amount of water trapped inside of it, and, again under a microscope, observed the same motions. Feynman, in his *Lectures on Physics*, maps Brownian motion onto a high-Q resonant circuit (basically a coil of wire and a Leyden jar), where *any resistance is a source of noise.*

> *Fluctuation, thermal creep, Maxwellian distribution.*

Albert Einstein investigated Brownian motion in 1905. He had published his doctoral dissertation earlier in the year on the statistical molecular theory of liquids, and he was interested in trying to prove the existence of Leucippus's atoms. Using Maxwell's principle of the equipartition of energy and the principles of osmotic pressure, Einstein realized that the pollen grains could be considered as large molecules, and full and equal partners in the collisional dynamics of the solution. What was new in Einstein's approach was to solve for the accumulated distance $\langle \rho^2 \rangle$ of a random walk, instead of the root-mean-square velocity. He published a clean set of the equations in *Annalen der Physik* in 1905. (He had two other articles in the same issue, on some other stuff.)

The mathematical implication of Einstein's equations was that if the hypothesized atoms which were pushing around the pollen grains were very very very small, they would be hitting the pollen grains equally all the time and they wouldn't move. If the atoms were very small but not vanishingly small, once in awhile, every so often, just by the laws of chance, more of them were going to push one way than the other and the pollen would *swerve*. Three years later a chemist named Jean Perrin plugged some numbers gleaned by careful observation into the equations and was able to calculate the actual number of atoms in the above-mentioned quart of air (or, more precisely, that there are 602,200,000,000,000,000,000,000 molecules in 22.4 liters of air). All good stuff.

> *(But of most importance to us, as we shall see later, is whatever it is that still fluctuates at absolute zero.)*

Spirit has a lot to do with air. Air has a lot to do with spirit. And there is another part of air, a small part, the union of earth and fire, called carbon dioxide. The "bad air."

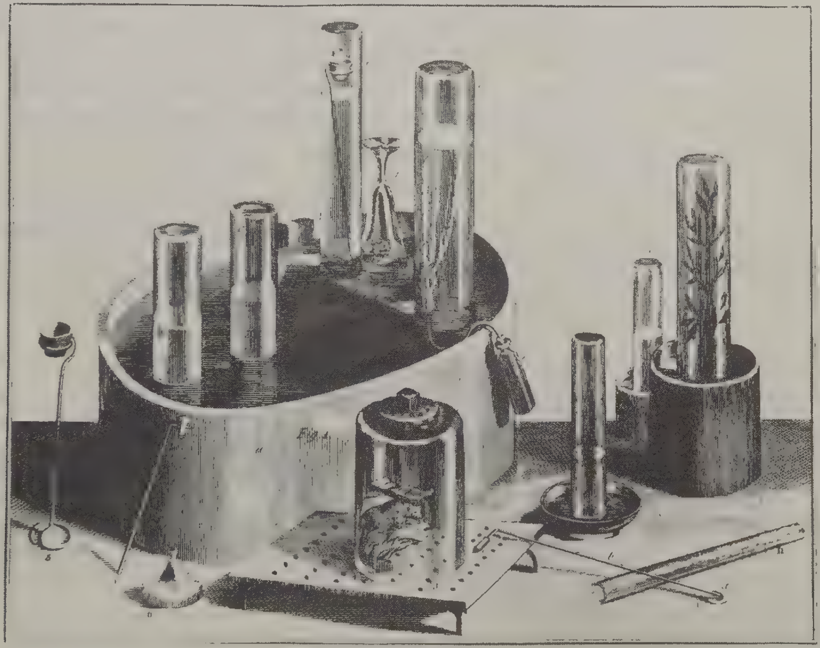
Carbon Dioxide

Carbon dioxide is a relatively minor component of the atmosphere, less than one-twentieth the amount of argon. The Mauna Loa measurement of carbon dioxide in 1959 was 0.0316 percent. My wonderful, well-used 42nd edition of the *Handbook of Chemistry and Physics,* 1960, lists carbon dioxide as 0.033 percent of the atmosphere. The new edition lists it as 0.037 percent, and current measurements are 0.038 percent. Exhaled breath contains about 4.5 percent CO_2. That may seem like a good margin, but climatologists claim that atmospheric balance is metastable, like a double oscillator, and that the continued dumping of carbon dioxide into the atmosphere (especially coupled with deforestation) will have profound and highly erratic effects on the earth's climate.

> *Sure, but you're not going to ask us to change the way we do business before we have more "facts," are you?*

In terrible chemistry set experiments of which I am not proud, I found that CO_2 knocked out a jar of ants even faster than chlorine. Recently, huge carbon dioxide bubbles released by a lake in Africa wiped out several villages. Increasing the CO_2 level in a greenhouse to 25 or 50 percent will kill white flies and aphids in eight hours. Even a CO_2 level of one percent seems to weaken them. A 5 percent CO_2/O_2 mix is used to treat hypoxia and carbon monoxide poisoning because it increases respiration and blood flow.

An English doctor, Henry Hill Hickman, had experimented with carbon dioxide as an anesthetic as early as 1824, and wrote a pamphlet on its benefits and potential for painless surgery. Unfortunately, by this time Sir Humphrey Davy, now president of the Royal Society, had disavowed the excesses of his youth when he had penned "Yet are my eyes with sparkling luster fill'd" in praise of his nitrous oxide muse. Hickman was studiously ignored by the medical and scientific establishments of both England and France, and died at the age of thirty, unheard.



PRIESTLEY'S GAS COLLECTION

CO2 inhalation therapy was pioneered by the renowned psychiatrist Ladislas J. Meduna in the early 1950s. Meduna is best known as the "father of convulsive therapy," which, according to a tribute to Meduna in the *American Journal of Psychiatry*, is "the most effective and broadest treatment for the severely mentally ill in use today." In 1934, after finding greater concentrations of brain glia in patients with epilepsy than in those with schizophrenia, Meduna intuited a deep reciprocal connection between the two states, and cured a catatonic schizophrenic by inducing seizures. Initially, Meduna induced the seizures with camphor, which is related to thujone, but he quickly changed to pentylenetetrazol. In the 1940s, electricity became the preferred convulsant, and its adherents claim that it is still demonstrably superior to any other therapy for severe depression, mania, and catatonia.

Meduna published his first paper on carbon dioxide therapy in 1948. By 1955, when Meduna's book *Carbon Dioxide Therapy* appeared, the technique was being used by over two hundred physicians. While not particularly effective on psychotics, the doctors claimed thousands of "cures" for a wide range of conditions, from obsessive neuroses and phobias and panic disorders to childbirth, stuttering, and homosexuality. The theory was that carbon dioxide induced "abreaction," the release and acting-out of deeply repressed fears and traumas.

Our bodies are tuned to let us know when we are not getting enough oxygen. There is an early-warning system so that we can try to do something about the situation before we lose consciousness. But this system isn't actually keyed to the amount of oxygen dissolved in our blood, rather to the level of carbon dioxide. In most usual circumstances, these two levels are correlated. When we're not getting enough oxygen, our carbon dioxide builds up.

Meduna devised a means of circumventing this: he mixed oxygen and carbon dioxide together. He called this mixture "carbogen." His usual mix was 70 percent oxygen and 30 percent carbon dioxide.

> *"The Meduna Mix"*

The result is that even though the body is getting plenty of oxygen, it doesn't think it is. Every cell is screaming that it's suffocating.

> *OSHA limits carbon dioxide concentration in the workplace to 0.5% for prolonged periods, or to 3% for brief exposures (up to ten minutes). OSHA considers concentrations exceeding 4% as 'immediately dangerous to life and health.' People who breathe 5% carbon dioxide for more than half an hour show signs of acute hypercapnia, while breathing 7–10% carbon dioxide can produce unconsciousness in only a few minutes.*
>
> *—Wikipedia*

Discussion on the toxicity of CO2 followed:

> *When the CO2 hits about 7% to 10% of your ambient air, you DO die. Even if the rest is O2. It's CO2 narcosis, and it shuts you down.*
>
> *—Wikipedia*

Which clearly isn't true.

Al Hubbard, who pioneered many aspects of the "psychedelic session" still familiar today (and was one of LSD's major vectors of dispersion) took up carbogen in the early 1950s. Hubbard used carbogen as a pre-screening ritual before giving someone LSD. He wanted to see how a person would respond to panic. In 1959 Myron Stolaroff became Hubbard's 1701st LSD initiate, give or take a few. Stolaroff often included carbogen as part of the many hundreds of LSD sessions he led at the International Foundation for Advanced Study in Menlo Park. Aldous Huxley, who was given carbogen by Hubbard, mentions it in the appendix of *Heaven and Hell*, noting its marked enhancement of the ability to "see things" when the eyes are closed, and to transport the subject to the "Other World at the antipodes of his everyday consciousness."

With the closing of the International Foundation for Advanced Study in 1970, and the death of Hubbard in 1982, carbogen disappeared from the scene, with only marginal use in psychiatry. The only recent research into the subjective effects of carbogen is the excellent study by Benjamin James, Jr., conducted in 1998 while he was still a student at the University of California.

James administered carbogen to sixteen volunteers, who were asked to pick a maximum number of inhalations between ten and twenty-five. James then applied a demand valve breathing mask and counted the inhalations out loud, removing the mask at the number chosen by the subject. He also told the subjects that he would remove the mask at the slightest gesture from them, which occurred in one or two cases. James reported no abreactions.

James believes that the set and setting have a significant effect on the nature of the experience. During the weeks of his experiments, as positive reports of the early sessions were shared among the volunteers, their sessions became more and more "wow" and "fun."

Inhaling carbon dioxide gets my vote for all-time "near-death experience," which, for certain spiritual conditions such as morbidity or "broken heart," is the only known cure.

The Ally

It's bad from the first lungful. It tastes sour. Alarm bells go off immediately. "This is bad." Will power is required to take even one full inhalation. By the second lungful, if you haven't ripped the mask off, full panic has set in. You need AIR! People start gasping at this point, faces flushed and sucking in the carbogen furiously. You are about to die. You have only seconds of life left to you. Somewhere, there is a memory that you are doing this on purpose, and that you trust your guide, the gas man, but such memory pales before the suffocation-in-progress. Nonetheless, you keep at it, and desperately suck in another lungful of the poison. Quickly, it becomes too late to help yourself. By the fifth or sixth breath things are getting fuzzy. There is a veil approaching. It's the Veil of Death, and the closer you get to it the easier it is to accept.

Then it becomes clear that dying is easy. All you have to do is quit breathing, and you do. Then you enter the World of the Drowned.

The World of the Drowned is peaceful and serene, the home of so many brave hearts. After awhile you think maybe you should breathe again, tiny, tiny breaths. Sometimes the colors are pastels. It's rainbow-land. It's the Deep Rest. Life was not such a big issue after all. What was all the shouting about? One could stay in such a place indefinitely. Then your guide removes your mask. You've reached your agreed upon dosage: twenty-six breaths.

> *I said something about dying being a personal thing.*

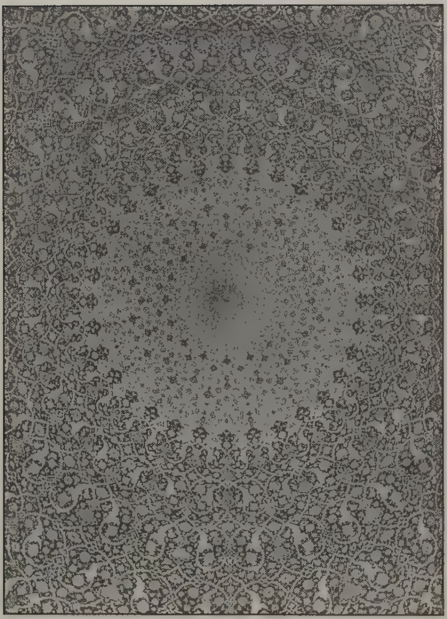
And gradually you come to.

> *"Hey," I said, "who poured water on my pants?"*

They told me that after the seventh lungful I'd been breathing deeply and easily the whole time.

Xenon, "The Stranger"

Aside from radon, a radioactive decay product of radium, xenon is the rarest of the noble gases in the atmosphere, being present in about one-twentieth of one part per million. (The good news, one might say, is that even a small room has a milliliter or two of xenon in it.) Xenon's anesthetic properties were discovered about fifty years ago. Xenon is highly valued as an anesthetic for patients with limited cardiovascular reserve because it doesn't lower the blood pressure ("does not depress the myocardial contractility; no apparent effects on mesenteric vascular tissue"). Xenon's use as an anesthetic is limited mainly by its great expense. Emergence from xenon is one and a half times faster than from nitrous oxide.



CUPOLA AT MASJID-I SHAH ROYAL MOSQUE, IRAN, CA. 1627

Xenon is a heavy gas. Carbon dioxide and nitrous oxide are both heavy enough to pour out of a beaker over a candle, but xenon is three times heavier than either of them. We could list some interesting gases in order of density:

$$He <<< N_2 < O_2 << N_2O < CO_2 <<< Xe$$

where "<" means slightly lighter than, "<<" means demonstrably lighter than, and "<<<" means a lot lighter than. Or heavier, reading backwards. I'm not sure what significance this formula has, other than as a statement of physical fact. However, there is another formula with more pith. Xenon is given the mystical quantum signature:

$$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6$$

Roughly, this translates as "nice spherical orbitals, no empty chairs." The orbitals, in fact, are so large that they are easily deformable, and this may be the secret of xenon's efficacy as an anesthetic. Research by Trudell, Koblin, and Eger at Stanford suggests that the deformation of a xenon atom creates a dipole that binds to a cavity site in metmyoglobin (ferrous oxidizing hemoglobin). The binding energies of other noble and diatomic gases at this site correlated with their model. Argon, krypton, and nitrogen are all anesthetic in pressure chambers. In the cases of neon, helium and hydrogen, which do not create anesthesia, the repulsive entropic energy was stronger than the dipole binding energy (Trudell et al.).

The heavy xenon gas emits bright white light under electrical discharge, and it is responsible for the brilliant white flash of strobe lights. Some automotive headlamps have begun using xenon, but I think it is a waste in that context (which is usually my rear-view mirror).

Xenon is mined from the air under liquefaction. About a fifth of the world's production of xenon is used in anesthesia, almost all of the rest is used as satellite propellant. All they care about is the weight, and that xenon is easily ionized—they really could get by with krypton, which seems better suited to space, just because of Superman.

> *Bug Girl thinks that it is that one-twentieth of one-millionth part xenon in the atmosphere that is the source of all the good feelings in the world. She is very concerned that we're extracting it and shooting it up into space.*

A far more immediate effect of the use of xenon as a propellant has been the increase in the price—even mixed fifty-fifty with oxygen it's going to cost close to fifty dollars a lungful. The good news is that xenon is more abundant in the atmosphere of Mars than on earth. Even on earth, however, there are local variations in xenon's abundance.

> *"The element is found in the gases evolved from certain mineral springs . . ."*
>
> —*CRC Handbook of Chemistry and Physics*

As a consequence of the quantum signature mentioned above, Xenon's only degree of freedom is wholly in *translational* energy. This is not true of nitrous oxide. . .

> *certainly a fact worth keeping in mind if communing with this elemental.*

Further, the pressure exerted by a gas, *p,* is the product of the gas density ρ times the square of the average molecular velocity:

$$p = \rho \overline{v_x^2}$$

Given a large numbers of particles, each of the vectors v_x, v_y, and v_z will be equal, so

$$p = \tfrac{1}{3}\rho \overline{v^2}$$

or

$$v_{\text{rms}} = \sqrt{\frac{3p}{\rho}}$$

From this it is easy enough to calculate that while the energy in a liter of room temperature xenon is the same as the energy in a liter of room temperature nitrous oxide, the average molecular speed of the xenon atoms is only 227 m/sec, LESS than that of nitrous, and even less that of oxygen, which would come to 461 m/sec. (The implications of this refreshing bit of physics, if any, are left to the reader as an exercise. 1 atm = 1.013×10^5 nt/meter^2).

> *Bug Girl thinks that once one has been sensitized to xenon, one can smell it and detect places with high concentrations.*

For anesthesia, xenon is usually mixed 70/30 or 60/40 with oxygen, combined with intravenous anesthetics. Because of the expense, xenon is used in a sophisticated, low-flow recirculating apparatus. My experiences were with a 50/50 Xe/O2 mix. We used a collapsible five gallon water container, just the right size for one lungful each for four people.

One begins by hyperventilating with pure oxygen, so that you'll be able to hold your breath for several minutes. Then you empty your lungs.

> *Maybe xenon is like nitrous + ketamine, those metaphysical splinters along the edge of consciousness mixed with some of ketamine's dynamism. And maybe with a bass drum somewhere, that while never actually being struck, nonetheless contributes a deep, subliminal throb. The blacks are exquisitely rich. The colors seem to favor the warm end of the spectrum.*

The unfolding patterns seemed to reveal the structure of perception. And how, in some geometric way, or in a way that is analogous to geometry, "reality," or existence, mirrors mental forms. Or maybe the opposite.

> *If you follow . . .*

I came up with this formulation:

> *Xenon : Nitrous :: Nitrous : Air*

Correlations to other anesthetics are apropos.

The Ally

There was just enough for one more round. I quipped, in somewhat of a boastful way, that I wanted "more darkness." I was second. Somehow I'd emptied my lungs more than usual. I went on inhaling and there seemed to still be room in my lungs for more. When I passed the container there was less than half left. Way less. Way obvious. And way too late to stop where I was going.

> *I descended through the Circles quickly, shame upon my face,*
> *each new mingling with the damned more horrible than the last.*

And it lasted an eternity. It seemed I'd never need to breathe again. It was hot and swirling, the floating worlds in motion and the shame almost unbearable and then another circle would open below me. I hesitate to report what I saw at the bottom of the pit, when I finally reached it. It'd be like saying that evil is good, that Augustine was right, as far as he went, but it went even further: not merely this world—that was already well-known—but the whole creation of the universe. . . in that nasty, greedy, selfish, grasping, clutching, screaming, and so wonderfully splendrous reach. I had found Original Sin.

> *Everyone was silent for several minutes. Finally Toad asked, "Dark enough for you?"*
>
> *(Yes.)*

THE ART OF NECROMANCY: KETAMINE

"It's better than heroin."

That was my first remark to the expectant group who had patiently sat with me through my first trip. I think they were hoping to hear what I would have to say about "the Wall," maybe even what was "Behind the Wall," or other High Mysteries of ketamine. The nurse had stayed on the bed and I still had my arms wrapped around her, which definitely added to the positive nature of the experience. My hands were kind of high and she'd let that be ok. I was amazed at how an anesthetic could produce such a sensuous experience. Good feelings, no pain, dreams that are intensely colorful and visionary and portentous and metaphysical, and all in a deeply personal way—"this is your own personal paradise." If that's not seduction, what is?

There are few things so exquisitely reductionist as Pleasure!
(in the bad way, i mean. in a laughable way, i mean.
spring shall triumph, i mean.)

Some people take K in small doses more or less continuously. John Lilly did, except his doses weren't small.

The Wall was thought to be the Veil of Death, and that beyond it lay the White Light.

"That for which we hunger."

But the Beyond we hunger for, not the Light. It becomes more and more difficult to find arguments against Freud's "death instinct."

After my pleasant experience, which lasted under an hour, I felt queasy and unsteady for three or four hours, and didn't like it.

Oh right. The comedown. That part.

I'd taken 75 mg IM, "light journeying." Insufflated quantities like 30 mg or 50 mg are for parties. 100 to 150 mg is for "significant journeying." Higher doses are for entering the "K-Hole," and can edge into a total anesthesia with no recall. Unless you get it just right.

A "dissociative" anesthetic.

Like its cousin, phencyclidine, "PCP," or "angel dust," or, in an even older parlance, "cyclo." PCP has acquired a more sinister reputation than ketamine, mostly the result of the socio-economic class of the users. Ketamine is the Key-to-Knowledge, while PCP is Dark-Men-Who-Can't-be-Stopped-by-Bullets.

The Ally

> *A young friend and his girlfriend and a girlfriend of the girlfriend brought some PCP over to my apartment, a very tiny pad in Venice on the canals. The girlfriend of the girlfriend was a big heavy girl—big around—and still in high school. We were lying on the bed and we just started doing the dirty right there.*

Pharmacology

Ketamine is a non-competitive NMDA-receptor antagonist, binding to the "PCP site" on the N-methyl-D-aspartate glutamate receptor and preventing neurotransmission. Glutamate is a central neurotransmitter involved in memory, learning, thinking, perception, and other cognitive functions of the hippocampus, temporal, and frontal lobes.

When glutamate is present in excess, as can be triggered by hypoxia, ischaemia, hypoglycaemia, or temporal lobe epilepsy, neurons in the cortex become over-excited. The cell keeps accepting ions until it literally explodes. This is called excito-toxicity. Glutamate flooding can also be triggered by hypercarbia (excessive carbon dioxide). Dr. Karl Jansen believes that glutamate flooding is also characteristic of near-death experiences (NDEs). Jansen also believe that ketamine protects brain cells from this excito-toxicity, but other researchers aren't so sure.

Experiments have shown that dissociative anesthetics such as MK-801, PCP, and ketamine produce lesions in the brains of rodents. No such lesions have been found in primates, but Drs. J. W. Olney and Nuri B. Farber say that no one has really looked. Both of them have concerns that ketamine could cause the same lesions in humans. Jansen believes this unlikely, that at high doses ketamine also binds to sigma receptors that would turn off the excitation. The technical arguments are complicated, and, I think, only resolvable by clinical studies. Even Jansen won't say that ketamine is non-toxic, just that it doesn't produce "Olney's lesions" in humans.

The evidence for dissociative anesthetics such as PCP, DXM, and ketamine producing brain lesions in humans is, at this point, wholly inferential:

Effects

a) NMDA antagonists can cause long-term learning deficits and psychosis in rodents
b) NMDA antagonists can cause long-term learning deficits and psychosis in humans

Cause

c) NMDA antagonists cause severe brain damage in rodents.
d) NMDA antagonists cause ??????? in humans.

C. Anderson (2003) sums up the arguments, which are really that there are other possibilities for d) than brain lesions. Actually, according to *emedicine.com*, there is little evidence for organic damage to the central nervous system even in chronic PCP users.

PCP and ketamine, despite their clear similarities, have differences both in their pharmacology and in their pharmacokinetics. PCP has anticholerinergic properties that ketamine does not, and can hide out in the body for longer.

> *But with either one you can float and swim and fly like Superman.*

Karl Jansen believes that IV injections of ketamine create an experience indistinguishable from an NDE ("near-death experience"). Since the ketamine experiences result from a glutamate flood, and NDEs (if one may generalize about them in any way) might be associated with a glutamate flood (his own was in a burning house, probably in a condition of hypoxia), there may be an as yet undiscovered brain chemical that plays the role of ketamine by binding to the NMDA receptor and protecting it from cell death by excito-toxicity. A fine theory clearly testable by its prediction.

Effects "A golden-yellow honeycomb, hexagons, suspended, stretching hundreds of thousands of feet below and above."

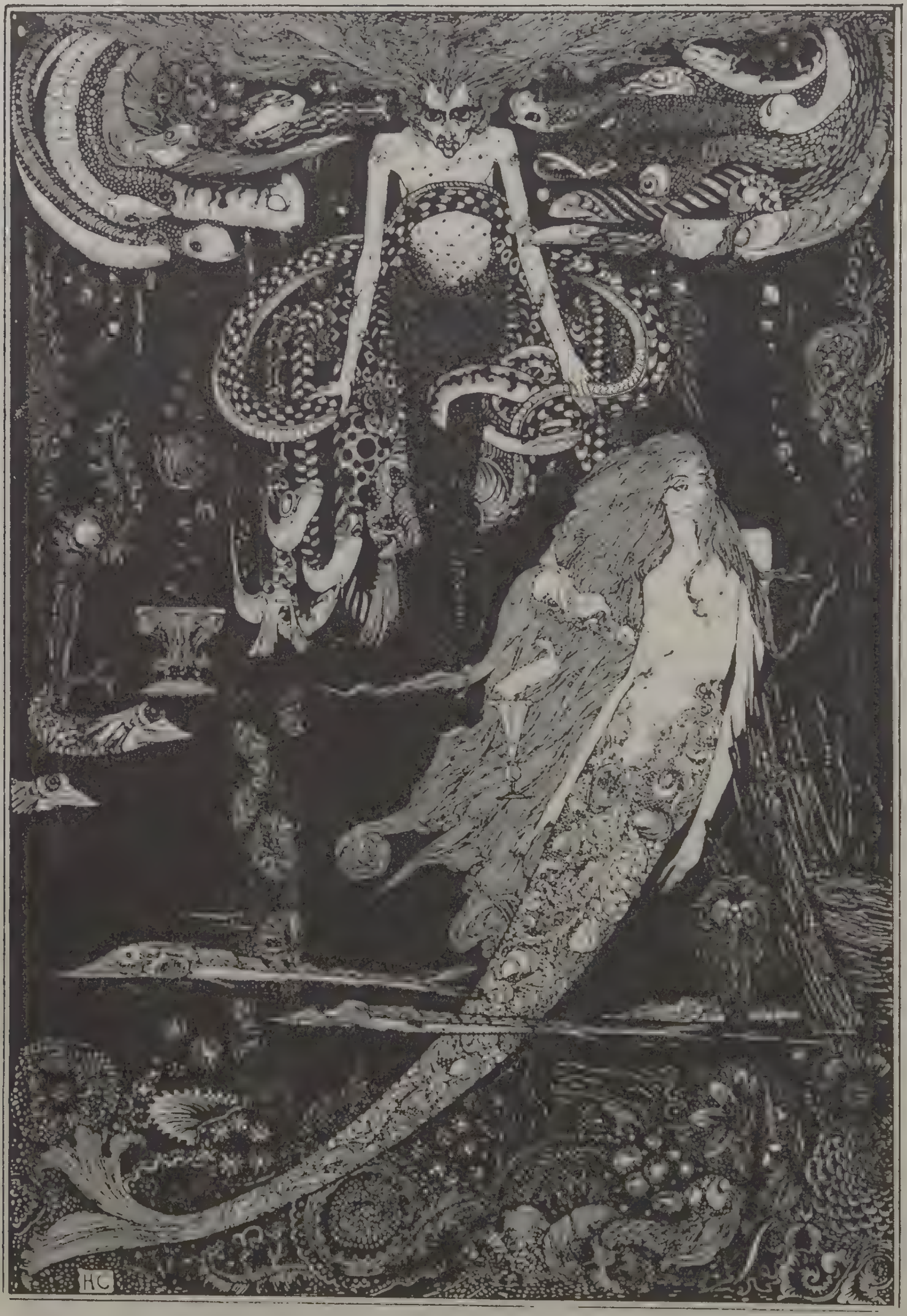
A ketamine brain scan actually shows most of the cortex shut down, but the hippocampus "lit up like a pair of deer eyes in the headlights," as one rural doctor told me. She thinks this may explain why so many traumatic memories can be relived on ketamine—that difficult memories that can't be classified and archived get stuck in the hippocampus (Quincy, 2005). Ketamine brings them back into experience. (Which, by the way, could account for Dr. Jansen's re-experiencing under ketamine his NDE of the week before.)

> *Jansen's partner had died in a house fire, and Jansen nearly died also, going back in to try to save her. When he took ketamine for his first time, a few days later, he was able to feel her presence. "You are in the place where everybody is who has ever died, and it was like she was looking after me."*

The Ally ("High dose" IM, two doctors babysitting and controlling the music, which was Jarre and maybe some Kitaro. I had a tape recorder going but it was mostly a bunch of "wows" and other exclamations with minimal semantic content.)

> *It started quietly enough. Easy and floating, but then things began to slip and gain momentum. The acceleration was impressive and it kept going. And then it was going too fast to hang on, but it didn't stop. And then I saw the world behind this world.*
>
> *About which I can't tell you a lot, except that I think it was multi-colored, or mostly white but with the potential of color—which was the same thing—and was of awesome perfection and simplicity. It would have been enough. I could have returned then and been fully satisfied and would have spoken a few things about geometrical forms but the doctor put on a new track and I was hurtled into the Yellow World.*
>
> *I call it the Yellow World because that was the predominant color of the light. There were abstract equivalents of wheels and cogs and levers. My only recorded comment was "Oh my God!" It was something like the machinery of the universe and though it*

NINGYO, JAPAN



CLARKE, 1916

> *was extremely intricate it wasn't static or delicate and huge fluid-like drops would explode out of nothing and it was changing all the time.*
>
> *I can't remember all the worlds, but there was also a Blue World. The Blue World was really the Blue-and-White World. It had paisleys and streamers and was more powdery and it had to do with stuff I had done, personal stuff, and new streamers and fractals were erupting from the ones already there. I think I was younger in that world. It was biographical but only in the most abstract way. Still, I could feel myself and my history and the recognition that I was personally a part of all of this was overwhelmingly joyful and humbling at the same time. Then the track changed or the train jumped and the world turned red.*
>
> *The Red World had long inclined planes and in a sober kind of way involved machinations and consequence. It was really red and dark, there was black stuff. There were no angels there, or I didn't see them, and it seemed to have something to do with volition. And something to do with matter, physical matter. This was the most threatening of the worlds, and the most somber.*
>
> *There were other worlds. One world had green in it and I saw the Tobacco Goddess and said hello to her—about the only such exchange that made it onto the tape—just "Ahhh, Hi, hi! The Tobacco Goddess!" She was friendly.*

Some of the stuff I was able to bring back later that night with the help of some ether, but ether adds its own twisted humor to everything.

Class *Metaphysica*

The inner structure of self-spaces. It's abstract and colorful but it's yours.

Patty tells me they give ketamine lollipops to injured children in emergency rooms.

> *"lick your way to bliss"*

K was a widely used field anesthetic in Viet Nam.

> *You haven't talked much about John Lilly.*

Yes. The one who went the deepest without dying.

He went deep and lived to tell. He had a lot of accumulated merit on his side. To start with, he was brilliant—he had brains to spare. He had friends and family. He had a strong support group of caregivers around him, who sometimes performed interventions. He had money. He was a lucky man. Even so it was very, very close. He was hospitalized for paranoid psychosis three times. He survived a number of near-fatal accidents (not the case with two other members of his group).

> *Craig Enright went down. Carol Carlssen went down.*
> *And Marcia Moore went down:*
> *her bones grasping*
> *the base of a tree.*

Lilly was once saved from drowning by friends who found him floating unconscious in his swimming pool.

> *And D. M. Turner went down,*
> *no friend to pull his face*
> *out of six inches of water in his tub.*

For long periods he shot up every hour. Like any junkie, he shot up in public bathrooms, and sometimes he'd be found unconscious on the floor. Like any junkie, he lied and conned. But Lilly must be the first junkie in the history of junkiedom to call it "Receiving Knowledge."

> *Most of us expect*
> *at least a modest respect*
> *for the straight world.*

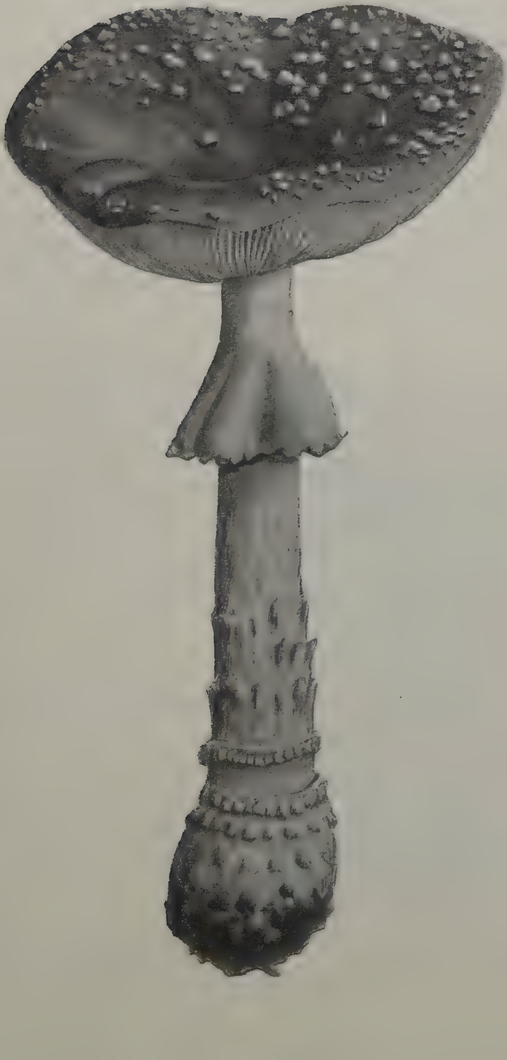
T*he* A*lly* ("Medium-high" dose, IM.)

I injected my companion first, in her sweet butt, and then myself in the arm. There was no sitter but other than falling off of the loft I couldn't see how there was much we could damage. Besides, I didn't think we were going anywhere. I didn't think we were going to leave the blankets and the pillows we'd laid out on the floor and we didn't. To an outside observer we would have been mostly inert, though maybe turning and rolling some. I don't think we were quiet, though.

> *Somehow we got to the Astral Realm of Desire. There was loud moaning. It was a deep space realm. It seemed physical but how could that be? There were swirling colors but colors that WANTED something. We were flying through dimensions and other universes and at the same time sinking through our is-ness and our identities and losing them but still there was something left and whatever that was was desirous. The whole realm of existence and all the possibilities of existence were desirous, were sprung from desire and made of desire. And distinctly sexual desire. Genital desire, surging unstoppably through hyperspace.*
>
> *Somehow, a hundred million light years from home, totally anesthetized and bodiless, we found each other and had sex the way the angels do.*

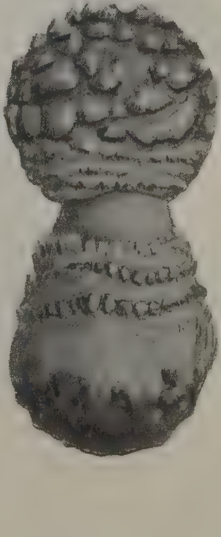
THE WORLD'S MOST FAMOUS MUSHROOM: AMANITA MUSCARIA

Amanita muscaria is the most famous entheogen in the world that nobody uses. (Ok, hardly anybody). It is the supreme symbol of all entheogenic religion: of secret cults and societies of initiates and whispered lost knowledge. Wasson thought it was soma and the origin of religion itself. John Allegro thought that Christianity was an *Amanita* cult, that "Jesus" was a code word for the fly agaric. One of several protégés of Wasson and Allegro, Clark Heinrich, has Moses initiated into a secret fly agaric cult before he sees the burning bush, as well as the mushroom being the Holy Grail and the Elixir of the alchemists. According to Andrija Puharich, the sacred mushroom was so highly revered by the Egyptians and so secret that it wasn't even part of their language. James Arthur and Donald Teeter add the Sumerian Tree of Knowledge and Mithraism to the mushroom's achievements. Peter Lamborn Wilson conjures *Amanita-soma* from Irish legends and folklore. Carl Ruck finds the mushroom hiding in the Golden Fleece, and in the fire of Prometheus. Blaise Staples finds *Amanitas* within secret orders in Christian monasteries.



> *Whatever else one may say about Amanita muscaria, she is certainly hypnotic. One could never call her tentative, nor afraid to stand out. She's showy. And she knows it.*

What is most remarkable about our Scarlet Woman is her power to bewitch from afar—you never have to touch her (much less eat her) to fall under her spell.



THE CRYPTO-AMANITAIST'S HANDBOOK:

A Song of Praise

I, who cannot hide, live in cipher and riddle.
In rebus and symbol,
I am anything Red, or Yellow, or Golden, or Tawny.
Or, of course, White.
I am the Sun, and I am the Moon.
I am all things Round, or Plate-shaped, or Urn-shaped,
and all Things-shaped-like-an-umbrella.
I am One-foot and One-eye and the Tree, where I grow.
I claim Pine and Birch, Rowan and Oak, and all Red Berries and Fruit.
I am all things Green.
I am Raven.
Milk I am, and so also Breasts.
Either the Penis is me, or I am the Penis, that part is not clear.
I am the Vulva, the Covering, the Caul.
The Egg I am.
"Bursting Forth" I am.
Splendrous I am, indeed.

What all of her worthy devotees have in common is their embracing of the word "entheogen." "Entheogen," proposed and subsequently championed by Ruck and his colleagues, has become the socially acceptable euphemism for "psychedelic." Or such, anyway, was the idea—Wasson's idea—so that the classy folk could distance themselves from the riffraff.

Unfortunately, "entheogen" is not a synonym for "psychedelic." Psychedelics are wild and transgressive. Entheogens are sacred and spiritual. Entheogens aspire to social acceptability. They think if they can only prove themselves bona fide religious sacraments—or better, the ancient basis of all religion and culture—that maybe then Daddy and Big Brother will admit us back into the fold. It's as if a blessing is cast just by the word being enunciated. One can almost smell the incense.

Oddly, many of the entheogenists are upstanding and respectable humanistic unbelievers. But in a way they seem stuck in the past tense.

Viz:

"Jesus was an entheogen" kind of works, at least somewhat, whereas "Jesus was a psychedelic" is impossible to even contemplate. But,

> *if they would only let the True Christ into their hearts, and accept His Universal Love, they would understand that "Jesus IS psychedelic" resolves all problems.*

And you can't do that with "entheogenic." Try. It's too self-referential to be semantically cogent.

Besides, despite the efforts of some of the best minds of the last two thousand years, no one has ever been able to prove the existence of God. So I find something slightly askew in entheogenic research, almost all of it. There's a weird absence. It's like there's something missing.

> *Hint! C'mon, give us a hint!*

Course, there are a lot of allies. The *Cannabis* ally loves obscure connections (just as an example).

As for *Amanita*, all the attention is just fine with her, as long as it's all theoretical. If you eat her though, it's a different story, and she'll take her revenge for the idolatry.

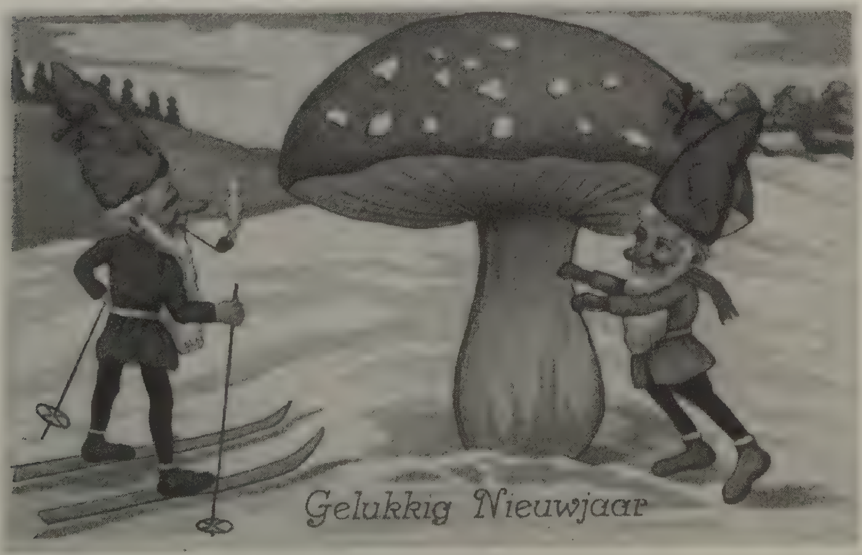
> *I started barfing… kept barfing… I was totally fucked up…*

It's like building a temple for a goddess, but not asking the goddess what it should look like.

> *Yes. Or speaking the Word of God without actually hearing it.*

It is now well-accepted (well. . . in some circles) that Santa Claus is an *Amanita muscaria* (no, really). Wasson came to believe that the absence of the mushroom proved its presence. Mostly, if something is red, white, or yellow, it could be the fly agaric. Unless it's hidden. Heinrich interprets a Verrocchio painting as a secret message between mushroom initiates because the shepherd's crook forms a cross at the base of a pine tree in the background: "x marks the spot." *Amanita muscaria grow at the base of pine trees!*

Which is, of course, true, and kinda, could kinda, make you think, maybe.



MUSHROOM CULTISTS

Some of the blame for the current state of affairs must be laid to Robert Graves.

Graves believed that there was a mushroom cult in Greece, and his intuition has been good in other ways, so we should stay open to that possibility. Claude Levi-Strauss took Wasson's theory of *Amanita* as soma seriously, and added structuralist arguments as to why is might be true (Levi-Strauss, in Pendell, 1973). Levi-Strauss also believed that *Amanita* was likely the berserker mushroom of the Vikings.

A Song of Praise

Delicious is the Amanita.
Madness is the Amanita.
"All things are mine," saith Amanita,
"Let there be no others before me."
I am both the God seen and the God unseen,
The Hidden God and the Great Revealer.
In some circles I'm rather tranquil and beatific,
The essence of Ineffable Mystery and Great Bliss.
To others I'm the Great Carouser:
"Let's get fucked up, let's eat Amanita."

The Plant

Splendrous without peer. Impossible to miss. Queen of the Kingdom.

> *They were in a pasture beneath some cypress trees. All the horses were staring at me, like they knew something, or were trying to tell me something.*

Anywhere in the world it grew, plant doctors must have tried it. And there are many traces, but they're almost always like old tracks, a footprint that's almost completely blown away, or an impression that might be a footprint. There are traces of *Amanitas* in Mesoamerica, among the Ojibway, and among some western Indian tribes. There are traces in the Pyrenees and traces in Germany. In Afghanistan there may even be footprints. There are traces in India, maybe. Traces, yes, and maybe traces in a secret sect of tantric Buddhists. Maybe.

> *For the Queen of Entheogens, it's all pretty muted.*

One would expect more. (I mean, compare it to say, mandrake.) From a distance, the silence in the hall is louder than the one or two who are clapping. The only people shouting are the Siberians.

Those among the animist-shamanist cultures of Siberia who use *Amanita muscaria* are divided into two geographical regions: West Siberia, where the Khanty, the Nganasan, and the Selkup live, and eastern Siberia from the Kolyma River to the Kamchatka peninsula, home of the Chukchi, the Koryak, and the Yukagir. Old Russians, who had lived along the Kolyma for centuries were also reported to use the mushroom. Most of the ethnographic reports were written between the mid-1700s and 1900, though there are a few new studies by Saar and others. A number of the early observers reported the drinking of urine. The Tungus tribes rarely use *Amanita muscaria*, preferring *Ledum palustre*, which says something about the environment these people inhabit.

Maret Saar (1991) divides the use of *Amanita muscaria* by the Siberians into four classes: sacred and magic activities, such as divination and communicating with the dead; the recital of epics ("after consuming two mushrooms they would go mad and sing for hours in a loud voice"); for difficult physical work, such as haymaking and pulling boats with ropes; and as a narcotic, for euphoria and dreaming. While *Amanita muscaria* is still in use in some parts of Siberia, vodka is more and more the intoxicant of choice.

The principal therapeutic use of *Amanita muscaria* is to induce healing dreams. An eighteenth century Polish explorer, Joseph Kopec, reported that his entire past was revealed in a series of *Amanita*-induced dreams, to which he attributed his convalescence. A biochemist, Eberhard Waldschmidt, uses *Amanita muscaria* to induce deep sleep, and reports that his patients awaken with improved physic.

Dr. Ralph Cosack, who has as much personal and clinical experience with *Amanita muscaria* as anyone in the world, uses the mushroom himself and gives it to his patients. Cosack reports that autosuggestion is important if one wants to extend the visionary phase of the intoxication. However, Cosack believes that the healing occurs in the later, dreamless (or unremembered) sleep, and that the healing effects are independent of the visionary effects. Cosack developed his therapy through years of self-experiments. Interestingly, Cosack recommends fresh young mushrooms (not dried).

Nyberg (1992), stresses that, in contrast to *Psilocybe* mushrooms in Mesoamerica, the use of *Amanita muscaria* in Siberia is basically non-religions, and that the mushroom itself is not an object of veneration. The Siberian accounts collected by Wasson (1968) generally present *Amanita* intoxication as secular, and characterized by alternating periods of slumber and manic frenzy. In one instance it is reported that the mushroom is taken to give one the courage to murder an enemy.

A Song of Praise

Who can watch the sun rise, and not think of me?
Who can see the moon in the night sky, and not whisper my name?
My name also means "ephedra," but that's to confuse you.
Neither Buddhists nor Hindus nor Christians nor Jews nor Muslims use Amanita,
But that's because they are no longer true religions.
In the True Religion, Enlightenment was passed from master to disciple
Through urine. Urinalysis and drug-testing are the moribund and Kali-Yugic
Perversion of this great practice.

Give up this prideful squeamishness, acknowledge me as the Great Pope,
Get over your stupid hang-ups and come worship Big Red.
Semen (by the way) is also my name.
Poison they call me, clearly a smear.
I am the Scapegoat, the Great Secret, the Hidden Wisdom,
The Reviled One and the Savior.
In spite of the rumors that I've been persecuted for millennia,

I'm still legal.
I am the Salamander and the Retort,
The Elixir, and the Grail.
I am Fire, I am Water.
I am Lightning, and I am Rain.
I'm the Bull, the Lamb, the Serpent, and the Dove.
I am All-that-flies, and the Clouds.
The Hammer is mine, and mine the Battle Axe.
I am Blood, I am Life.
Shiver before me, mere mortals,
You shall sweat at my approach.
You shall tremble and shake,
You'll be sorry for your sins.
What seems is not, and what's not is what is.

◆

The Plant The importance of suggestion (e.g., "set") in the reported effects of *Amanita muscaria* must be considered. In this regard, I can think of no more positive "set" than Wasson's widely-accepted belief that *Amanita muscaria* is the fabulous soma. (I mean, if it weren't for Wasson's theory, who would even be trying this mushroom, except for a few plant geeks?) The prevalence of toxic and negative experiences among North American users is, for this reason, all the more remarkable.

Many wonder if the North American strains are different, in some crucial way, from the circumpolar races. One shamanically-inclined plant person, on the advice of a Native American he got to know in northern Alaska (who also told him that they would track inebriated reindeer to collect their urine), ate a fresh young *Amanita muscaria* and was able to hold telepathic conversations with various local spirits associated with rocks and trees. When he tried the same thing in California, some years later, he experienced only the characteristic atropine-like toxicity. (Incidentally, this informant had not heard of Wasson's soma theory when he first tried the mushroom in 1965.)

Effects The effects of ingesting *Amanita muscaria* often fall into three stages: an initial phase of nausea and vomiting (sometimes absent), followed by sleep, followed by a third phase when there might be visions and hallucinations. (Others would dispute this characterization vigorously, denying the nausea and inverting the chronology of sleepiness and visuals. Michelot and Melendez-Howell characterize the initial stage as "confusion, dizziness, and tiredness, with visual and auditory aesthesia, space distortion, and unawareness of time," followed at about two hours by drowsiness and vivid dreams, ending in a deep sleep which lasts about eight hours.) Festi and Bianchi (1992) report that mushrooms collected in September induce more marked nausea and less narcotic and visionary experience than those collected in August.

You are leaving out talking to spirits.

Some of the Siberians say that the best time to talk to the spirits is after the dreaming.

At high doses the dissociative effects predominate. Low doses have been described as mildly euphoric.

> *At a moderate dose, though I still felt fine, the rumblings of the massive energy in the background, and its potential for disruption, were clear.*

Clark Heinrich's single and notable experience of mystical rapture involved eating *Amanitas* over thirty days and, finally, drinking urine. It is, I think, the only such account anywhere in the literature, and it has never been repeated.

* * *

I surveyed the several dozen reports of eating *Amanita* on the *erowid.org* web site. Trip reports can often have a tedious quality, but this is not at all true in the "Amanita Vault." *Amanita* seems to bring out an inspired articulation. The word "entheogen" is refreshingly absent. My favorite report is by "sixthseal," a minute by minute accounting transcribed in real time.

The Ally

6.5 GRAMS, TOOK AT 5 PM

5:40

WAS GETTING SLIGHTLY SLEEPY WITHOUT REALIZING IT. AND I'VE READ ABOUT THE NAUSEA, BUT GOD, I DIDN'T KNOW IT WAS THIS BAD. IT JUST SUDDENLY STARTED. THE NAUSEA I MEAN... GONNA LIE DOWN FOR AWHILE.

JUST GOT UP TO TELL YOU ALL VERY DIZZY AND I NOTICE THE SALIVA EFFECTS TOO.

I FELLL ASKEEP JUST NOW AND SUDDENDLY WOPE UP BEOFRE 10. I DON'T REMEMBRE DREAMING OR TAKING THE MUSHROOMS AND JUST SAT UP FOR ALMOST 5 MINUTES THERE NOT KNOWKING ANYTHING.

SORRY, TELLYING IS HARDF SINCE I'MT THINKBG ONE CHARACTER BACK IS CORRECT/I KEEPM MOVIG MY HEAD TO THE NORTHWEST.I CAN TELL I'M VERY UNDER THE INFLUNCE. IT WAS GO KEEP GOING NORTHWEST. KEEPS ON UPPERRIGHT UPPPERRIGHT AND HEHE OOPS I THOUGHT MY DIGICAM WAS MY MOUSE... YEP, LAZY TO CORRECT THE TYPOS TOO.

WALKKED TO THE TOILET JUST NOPW AND REALIZEE MY MOTOR SKILL ISN'T AS STABLE AS I THOUGHT IT WAS. FELL DOWN WHILE PUTTING ON TOILET SLIPPERS. THINGS ARE STRANGE TOO, FOUND MYSELF VERY OPEN TO ANY SUGGESTIONS, CAN BE QUITE A DANGEROUS DRUG IN THIS CONTEXT.

> And now my head heard this it keeps wanting to lean to the left and grabbed my mouse receptor instead of my mouse.
>
> The effects are mainly mental. The only 'visuals' I saw was a very fast moving field of vision. You dunno how hard it ws to type thoe few words. My brain keeps repeating 'television' and another phrase I forgot to comfuse me. It wanted me to help something else, I think. Oh I rememeber now! It was 'help' my brain keeeps repeating 'help' in a male voice like someone is in trouble. The vouce sounds middle aged, caucasian, and weakening, like he's drownking (not in water) in something like weak sand. Quicksand I mean.
>
> Yeah it things can be quite blur. Trying to do things is hard sice your mind seems to have a mind of its own and want to do other things. So you end up doing things that was not what you wanted. This is like picking up wrong things – want to pick up keys, pick up fan instead, really strange stuf. Hmm…

Sixthseal concludes with "it's quite interesting, not 'noteworthy interesting' but 'interesting interesting'."

That's a field report I can't hope to match, and I'll let it stand—no absence of the ally there!

* * *

Considering how superstitious we mental travelers are, not wishing to speak any untruth or to offend a plant that might be someone else's ally or that might get back at us sometime, the rest of the reports are overwhelmingly negative. One man woke up to find his apartment trashed, tables broken, a chunk taken out of a wall, and a big lump on his head:

> *I couldn't move 3 fingers on my right hand, my thighs ached and I couldn't walk properly for a week, I had no skin left on the front of my legs from my knees half way to my ankles, various other bruises all over the place.*

Several reports mentioned having to physically restrain a mushroomer, and another report lends credence to the theory that *Amanita muscaria* was what the berserkers ate:

> *It gets worse, he starts to express different emotions first happy then crying and sits in the closet. He is talking about the devil and god a lot. Everyone is fucking with him now because they can't believe he is this fucked up. Someone pushed him and*

> *he punches them in the face. Someone punches him back and he does not move or feel it. . . he pisses on the rug. . . he is chasing people naked and does not look in control of his body and seeing things. . .*

This report is remarkably similar to one made by Stepan Krasheninnikov in 1755 of a Cossack posted to Siberia who ate the mushroom and became the butt of his fellows after the mushroom ordered him to confess all of his sins.

One man wrote: "Folks, just because it gets one 'fucked up' doesn't mean it's a guaranteed mystical experience. I see it in no other way than that of eating poisonous mushrooms, and I can't blame mycologists for seeing them this way."

Reports of the effects of *Amanita muscaria* were available to Charles Dodgson, and the "One side will make you grow taller, and the other side will make you grow shorter" statement by the caterpillar in *Alice in Wonderland* may be based on M. C. Cooke's description in *The Seven Sisters of Sleep:* "Erroneous impressions of size and distance are common occurrences."

Pharmacology

The principal alkaloids are ibotenic acid and muscimol. Muscarinic effects, while clearly present, are probably not due to muscarine, which, in most races at least, is only minimally present. A small percentage of the ibotenic acid is decarboxylated into muscimol in the body, and the muscimol is thought to be responsible for many of the mushroom's effects. A significant amount of the ibotenic acid is excreted in the urine, along with traces of muscimol. Contrary to some popular theories, the ratio of ibotenic acid to muscimol is higher in the urine than in the fresh mushroom.

Ibotenic acid is quite neurotoxic, being regularly used in laboratories to create lesions in the brains of small rodents. No brain lesions have ever been observed in humans attributable to *Amanita muscaria*, but I don't think anybody has ever looked. Brain lesions have been reported from rodents treated with ibotenic acid and muscimol (Lescaudron, Bitran and Stein, 1992), but "treated" there means injected. It all depends on dosage and length of exposure. A gram of fresh *Amanita muscaria* cap may contain 1 mg of ibotenic acid, but no one knows how much of it actually enters the brain. It is believed that ibotenic acid crosses the blood-brain barrier by active transport (Olpe and Koella, 1978), while muscimol diffuses across the lipid bilayer, though inefficiently (Presti, 2005).

Ibotenic acid can induce mental effects in doses of 50 to 100 mg, muscimol in doses of 10 to 15 mg.

Ibotenic acid acts on the glutamic acid receptor, and is thus excitatory, while muscimol acts on the GABA receptor, and is depressant. At least in cats. And snails. The benzodiazepines enhance GABA activity and there is evidence of cross-potentiation. The alterations of sedation and excitement characteristic of *A. muscaria* are certainly suggestive of the presence of both the inhibitory muscimol and the excitatory ibotenic acid. However, even though the dissociative effects of high doses of *A. muscaria* fit well with NMDA excitation, it is not clear if this mode of action actually occurs in humans. I think the pharmacology of *Amanita muscaria* should be considered as "not well understood."

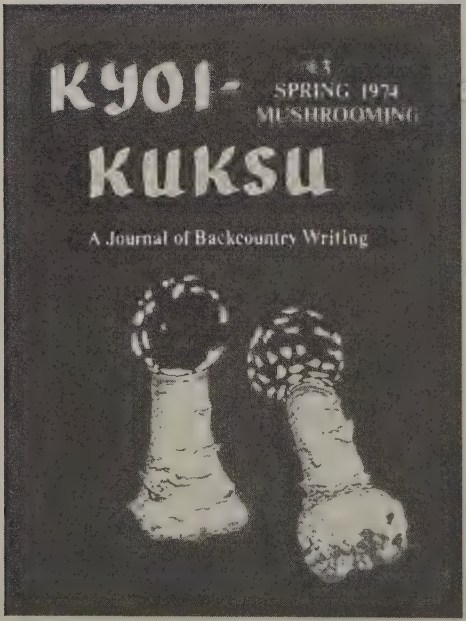
Two other active components, detected in *Amanita pantherina*, are (2*R*),(1*R*)-2-amino-3-(1,2-dicarboxyethylthio) propanoic acid and (2*R*),(1*S*)-2-amino-3-(1,2-dicarboxyethylthio) propanoic acid.

Enter sulfur into the story...

These substances act on the NMDA receptors KI-II-A and KI-II-B respectively, and offer a possible alternative pharmacological explanation for some of the mushroom's effects.

The brilliant red pigment of the fly-agaric cap is called muscaflavin, and, no surprise to mycophiles, is the same pigment responsible for the similarly brilliant red caps of certain waxy caps, *Hygrophorus puniceus* and *H. cuspidatus.*

The ability of Amanita muscaria to kill flies is debated. I have never been able to kill any flies this way myself, despite a number of attempts. Some have reported that flies become temporarily inebriated from the mushroom, and it is conceivable that, in such a condition, they could drown themselves. Michelot and Melendez-Howell conclude that the "fly" association has to do with spirits ("Beelzebub") and possession by demons and not to the order *Diptera*—that the original folk association of flies and demons has been gradually lost.



Amanita muscaria concentrates a number of heavy metals in its flesh, particularly vanadium and selenium, but also cadmium, cobalt, chromium, lead, mercury, and nickel.

Ibotenic acid content of Swiss specimens of *A. muscaria* varied between 0.08 and 0.1 percent of fresh weight (Festi and Bianchi). Percent of dried weight should be roughly ten times those amounts. Percentages in specimens from Oregon and Washington are reported by Largent to be higher, and Northern California speciments may be higher yet (Largent, in Pendell, 1973). Muscimol content in fresh specimens varies from little to 0.05 percent. The combined isoxazoles amounted to 0.46 percent in an American specimen of *Amanita pantherina* (Festi and Bianchi).

Drying the mushroom evidently allows some percentage of the ibotenic acid to decarboxylate into muscimol—possibly a quarter or a third, or perhaps even more (depending on drying time and temperature, I would think). It is generally believed, at least in mycophagic circles, that drying the mushrooms both increases their potency and diminishes the negative effects. This later contention, while theoretically attractive, is clearly enough not well supported by the evidence of users. More than one experienced *Amanita* user believes that fresh young specimens are the best.

Dosages are reported as one to five dried caps, or five to ten dried caps, depending on who one asks. Dosages by weight of dried material in the Erowid accounts vary from 6 grams to 15 grams. Ott reported eating 30 grams with no ill effects, an atypical response. Sometimes the dosage is reported as from one-quarter to three-quarters of a cup, chopped.

There is no specific antidote to poisoning by *Amanita muscaria* or *A. pantherina*—you have to ride it out. Neither muscimol nor ibotenic acid is removed from the receptor by the GABA or glutamate active uptake system. F. G. Waser (in Efron, 1967), who experimented on himself by swallowing 20 mg of ibotenic acid in water, experienced his first ever migraine headache the day after the ingestion, which continued "in milder form" for two weeks.

Amanita muscaria is not considered hepatotoxic, though very sensitive tests have shown the presence of amatoxins.

Ibotenic acid is quite water soluble. Peeled *Amanita* caps are eaten in both Mexico and Japan without ill effect after first par-boiling them and then discarding the water. A "little" bit of ibotenic acid enhances the flavor—it has structural similarities to monosodium glutamate and has been patented as a flavor-enhancer.

Class *Telephorica*. In its effects, *Amanita muscaria* is most like the tropane deliriants, and could easily be grouped with them, even though the pharmacology (what we know of it) is quite different. But *Amanita* intoxication lacks the erotic tone so common among the nightshades. Besides, it might be Soma. It deserves its own class.

The actions of *Amanita* on the GABA system link it to absinthe, an association experientially supported by the sociable effects of a delightful *Amanita* beer of a certain skilled and innovative brewer from Oregon.

> *In the spirit of Amanita studies we could go further, of course, and maintain that the Green Fairy is really a disguised elf, elf equals toadstool (visualize the cap), and we are back in Santa's workshop with proof that Teutonic magicians had penetrated the secrets of modern pharmacology.*
>
> *And, moreover my friend, a strong indication that we should open that second bottle.*

The Ally Among the Khanty the *Amanita* mushroom is used for divination. If a father, for example, wishes to discover why his child is sick, he will eat mushroom caps and fall asleep. In his dream he meets dwarves. The dwarves will ask him why he has eaten *Amanita muscaria*. The man explains his wish and the dwarves give him the answer. To onlookers it appears that the man is asleep, except that sometimes, when he is talking to the dwarves, he speaks in a loud voice. Sometimes you have to call the dwarves by singing.

> *Oh you little gold-stiped fly-agaric, chao-chao-chao,*
> *Such tiding you brought me, chao-chao-chao,*
> *Little patterned-stiped fly-agaric, chao-chao-chao,*
> *Many messages, many words you have, chao-chao-chao,*
> *(An unknown word) is placed on golden grass, chao-chao-chao.*
>
> —*Karjalainen, and Silvet, in Saar, 1991*

Effects There was a cat that came over to the cabin from the neighbors, a sleek Abyssinian named Grendel. Grendel was the most agile cat I had ever known. I had a lot of *Amanita muscaria* cut into strips and drying in a basket up on the rafters. When I looked up I saw that Grendel had climbed into the basket and was eating them. I yelled at him to stop and come down and he did but he slipped on the ladder and was just barely able to catch himself. His eyes were huge. . . .

The Plant One of the earliest accounts of *Amanita* use in the counterculture was by Coyote Man and Brother William in *Get the Buzzon*:

> *Each plant, each animal calls out its name—not its English name, its real name. In some way the shaking aspen leaves and the barking fox say their names. Another amanita, the ahah mushroom, has no tongue. He calls out his name through humans. When people looking for Amanita velosa eat instead the ahah mushroom, Amanita pantherina, they get a vacant look on their faces and wander about, the backs of their hands against their shoulders, saying, 'Ah-ah-tee, ah-ahai-tee, ahah-tee.' That's how that mushroom calls out its name—ahah.*
>
> *The old people knew about Amanita muscaria, the fly agaric. They said the red mushroom with rock salt sprinkled on top makes people go crazy if they eat it. The people saying that knew of the sacred mushroom without having used it. Only some of the old people got high from plants—they were into things like chanting, dancing, special diets. . . seeking spirits.*
>
> *I ate three big caps the first evening of the Fall Mushroom Celebration. Then the meat lost its sweet flavor. Instead, it tasted like a copper penny and its skin suddenly turned hot and peppery. Amanita told me I had enough.*
>
> *'Many wild mushroom eaters become high without even knowing what is happening. Those who collect many different kinds of wild mushrooms may eat one that gets them high in a subtle way.' Amanita said that.*

◆

The few circles that I know of that use Amanita are all mountain folk, like Coyote Man's circle. They eat fresh mushrooms. Mostly they report it to be a shared ordeal and catharsis, and therefore of group bonding.

> *You feel REALLY good afterwards.*

The Ally Jeremy had traveled back into the lake country near Lake Superior. He went light: no extra clothes, no gear, no food. He'd only brought one little thing with him, wrapped in foil and in a tiny bag. When he reached his campsite, there were *Amanitas* growing under a tree. When he looked in his bag, the foil-wrapped gift wasn't there. He considered making the long day's journey home to get it, but then decided to eat the *Amanitas* instead.

For his first time ever, there was no nausea or retching. He ate a lot of them. He said that his mind felt pretty empty. He lay down and when he woke up it was late the next day and his clothes were drenched with sweat. After awhile he got up and was able to walk. It took some getting used to, but with some practice he said it was fun, and he walked all around the lake and through the forest for hours. It was as if everything were new.

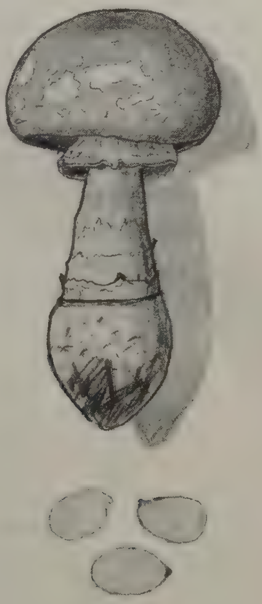
> *You feel REALLY good afterwards.*

When he got home and was unpacking, he found the little foil wrapper right in his bag where it was supposed to be.

I prefer *Amanita* as a smoke. Just the skins. And even then not much.

The Ally

> *"I'm waiting for you."*
>
> *"Ney, darlin', once enuf."*

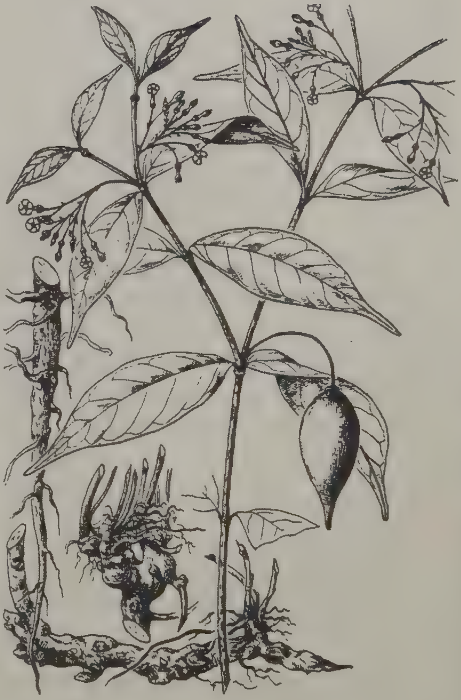


A. PANTHERINA

IBOGA AND THE GHOST DANCE: TABERNANTHE IBOGA

The Plant Iboga is the powdered root-bark of a small tree, *Tabernanthe iboga*, native to the Congo area of Africa from Cameroon to Angola. With iboga, we have come to the Apocynaceae, the dogbane family, richer in alkaloids than any other. A characteristic of the family is the windmill-like overlapping of the five lobes of the corolla. Another distinctive character is the presence of milky latex. Many members of the family are grown as ornamentals. Most of them are poisonous.

Oleander (*Nerium* spp.) is a dogbane, as is periwinkle (*Vinca* spp.), a plant I've never gone very far in exploring. Frangipani (*Plumeria* spp.) is a dogbane. "Indian hemp" (*Apocynum cannabinum*), which contains cardiac glycosides, was one of the very first plants on my list of "leaves to check out," where it remains. Star Jasmine (*Trachelospermum jasminoides*) is in the Apocynaceae, and contains ibogaine.



TABERNANTHE IBOGA

Indian snakeroot (*Rauwolfia serpentina*), an ancient part of Indian medicine, is the source of reserpine and has been called "the insanity herb." Gandhi was said to have favored *Rauwolfia*. Reserpine was the first tranquillizer introduced into western medicine, and saved many schizophrenics from electroshock or lobotomy. In India *Rauvolfia* was widely used to control hypertension. Reserpine causes the release of all the monoamine neurotransmitters stored in the vesicles and thus depletes neurons of serotonin, dopamine, and norepinephrine. Dennis McKenna once said that taking LSD twenty-four hours after taking reserpine could magnify the effects by 50 to 100 times (a mind-boggling thought).

The Ghost Dance

In times of stress. In times of cultural stress. When one's country is colonized, or occupied. When up against a materially superior culture. In times of cultural collapse. When overwhelmed by cynicism and despair.

We begin dancing to remake the world.

We call upon the ancestors who know the old ways.
We dance to bring back the buffalo.
We dance that the world may end, that the evil be destroyed
by fire or by flood, by ice or by sword.

That in a New World we can live without oppression.

James Fernandez lived with the Fang in Gabon for two years, 1958 to 1960. He hitchhiked around until he found a village where he thought he might like to do his fieldwork. The elderly men he approached spoke no French, so a young boy translated. The old men were weaving rattan baskets. They were surprised when they learned that he was looking for a place to live, but the old man walked over to the talking drum, beat out the tattoo meaning "white man present," and then the names of the families that should be present for the palaver. Everyone soon arrived, and after much discussion, it was decided with whom he might stay.

The Fang were relative newcomers in Gabon, having expanded from the northeast during the eighteenth and nineteenth centuries. According to their own stories, they had once lived on a savannah. Pressure from Sudanese imperialism had started a domino effect of a southeasterly migration along a thousand mile front. The Fang were the cutting edge. The equatorial forest had stopped them, until they were given assistance by the Pygmies. The Pygmies also gave them iboga. The Pygmies used iboga for hunting.

The Fang were cannibals. Everyone said. They were fierce and there were bones and skulls all over their villages. In the nineteenth century American missionaries were anxious to contact them. The missionaries wanted to make first contact so that they could protect the Fang from the decadent effects of civilization so apparent among the coastal tribes. It was a difficult mission, and several of them died in country.

The French wanted to make contact also, so they could cut out the tribes who were acting as middlemen in the ivory trade.

Anthropologists also wanted to make contact, to witness the purity of Man in the Wild, unblemished by contact with the low morals of European traders. Richard Burton visited the Fang in 1862, and stated that their cannibalism was restricted to the eating of a slain enemy.

The French extended their influence through Gabon for the rest of the century, and one particular colonial official, Savorgnan de Brazza, was still remembered, by old men interviewed by Fernandez, for his honesty and integrity. But by the beginning of the twentieth century, the French gave up the rhetoric of "a civilizing mission." There were business concerns, matters of trade. Merchants and traders were annoyed that some of the Fang were asserting territorial rights and demanding a cut in the action, and the French resorted to force of arms. Disruptions in the flow of ivory and rubber were not to be tolerated. The Fang put up some resistance, but, despite their fierce reputation, they were not really a warrior culture, at least not in any organized way—they were too egalitarian. Only one Fang war leader emerged, and few of the Fang were inclined to "join up." Internecine rivalries were strong. The resistance was mostly sporadic and uncoordinated "piecemeal" attacks, and was put down in 1905. It was at this time that the Fang picked up a new religion, Bwiti.

The Ghost Dance

> *This study proposes that all our knowledge of the supernatural derives de facto from the statements made by religious visionaries or ecstatics (i.e., prophets and shamans)—the priests only administrate the ecclesia established on this supernatural basis—and that the nature of the shamanic ecstasy may be illuminated by attention to ancient hallucinogens.*
>
> —*Weston La Barre, "Hallucinogens and the Shamanic Origins of Religion"*

The Plant

Fernandez had been in the village of Assok Ening for about three months and had ceased to be an object of attention when one night there was a loud knocking on his door. It was a bearded man in a long flowing robe with a red cord tied around his waist. The man addressed Fernandez in articulate French.

> *"Monsieur, I am Metogo Zogo, Nganga Bwiti, and I must speak with you. You seek the truth here but you will not find it. You do not know me but I am no stranger. I am a child of this village just returned from a long spiritual journey. I have been following the truth! You will not find it in this village talking to these old men. You must come to the Bwiti Chapel in my father's house, Zogo Ebu.*
>
> *"You want to know the 'old things'. But none here know them. . . . They have not seen them. We Banzie see them when we eat eboga. We see the 'old people' there. We know the 'old things' through them."*

Fernandez relates how the man, after gazing at him steadily, grabbed his arm and lifted it.

> *Don't be too sure of yourself. You are not free of all your sins. Look at this arm. You are not without blemishes. . . . You should dance with Bwiti. You have heard the harp at night? While all these villagers are asleep we dance and journey far. They go nowhere here. They wander around in confusion. They don't know where to go. But we go far. [He took hold of the red-woven cord around his waist.] You see this cord? This is the Path of Birth and Death. We follow this path. We know life. We know death.*
>
> —*Fernandez, Bwiti*

The Ghost Dance

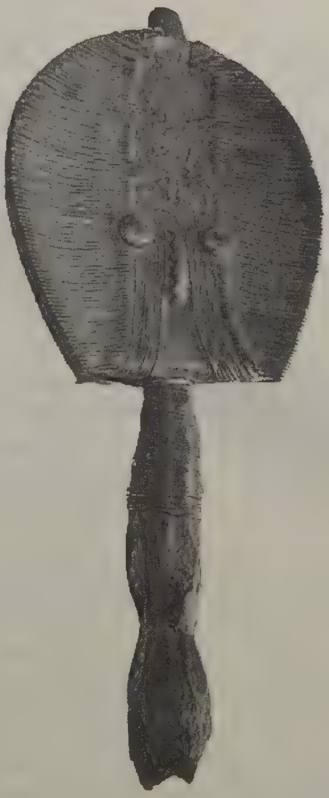
> *Magic does not reflexively examine the self as a will but takes its necessities for granted, and hence magic narcissistically and complacently indulges the subjective Pleasure Principle. Magic does not discern the object as discrete, and hence misses real coping with the Reality Principle. Magical belief, therefore, is self-delusory fixation at the oral-anal phases of adaptation, with purely fantasied operation of the omnipotent will. It is a narcissistic failure to discern ego boundaries and the limitations of ego control. Emotionally, it is hubris; intellectually and in cognitive potential, Thanatos. In the superb metaphor of Frazer, magic pulls strings to which nothing is attached.*
>
> *—La Barre, The Ghost Dance*

(I remember how enraged I was when I read this book—it seemed an assault on all I held dear and I felt that it had to be answered. It was always there, the mocking... that intellectualist dismissal of "hallucination" and of the ridiculous poetry of "spirits"—which has now almost become a sub-theme of these books. I should have taken a clue from the emotionality of my reaction.)

The Plant

Before World War I, the Fang used a different plant in the Bwiti ceremony, *Alchornea floribunda*. They adopted the use of *Tabernanthe iboga* from neighboring groups and the cult expanded greatly in the 1920s and 1930s, to the alarm of the missionaries. The first person to be incarcerated for iboga was a Frenchman named Roger Benoist who spent five years in a Gabonese prison for having participated in a Bwiti ceremony where an initiate died. The enlightened leaders of the Popular Front government, mostly anticlerical socialists and Freemasons, considered Bwiti to be a retrograde movement opposed to progress. It wasn't until the 1950s, when Leon Mba returned from exile, that Bwiti became a political force. Mba, if not a Bwiti member, was at least a sympathizer, and his party won overwhelming Bwiti support. Mba became the first president of the new Gabon Republic.

In Bwiti (at least when Fernandez observed it in 1960), the "knowledgeable ones" earned their positions by their skill in leading the ceremonies, by being able to assuage contentiousness with small ceremonial innovations and with appropriate words. There was no "sacerdotal caste."



The Plant

The Fang have a word, *akyunge eseng,* that means something like "amazement." Amazement at how iboga can intervene in their lives. Amazement at iboga's power to reveal the "unseen," at the bridging of the natural and the supernatural, and the living and the dead.

The Ghost Dance

Basically, La Barre sees shamanism this way:

At first there is the oceanic oneness of the womb. Birth is the first harsh meeting with reality, baby has to breathe. Baby has to suck. Even at this stage some succumb to the death instinct and won't, stubbornly refusing to give up the earlier stage of passive gratification. ("Similarly, the schizophrenic stubbornly refuses to meet the hateful and frustrating world psychologically.")

The Power of the Word is learned at this point. The oral phase. Cry, and you get what you want. Morality enters: that's the sphincter.

> *Sphincter morality, 'lowly' and hateful as it may be, is therefore the first germ of the 'loftiest' human artifact, the conscience or socially shaped superego. It is the first concession of self-will to the interests of society, and thenceforth the superego, in the normal person, will have a part-hegemony over the ego.*
>
> *—La Barre*

"Exuvial magic pretends to be 'anal omnipotent' and symbolic magic 'oral omnipotent'." More and more frustrations emerge to foil baby's god-like will. As, for example, Father, who usurps "king baby's right to the kingdom of mother's body."

At this point, in La Barre's eloquent and maddening summation of the Freudian universe, boys and girls go separate ways. The boy has to cope with losing the mother to the father, and what can he do but to try to be like him, an abstract hateful character possessing awesome omnipotence and penis-*mana*. Baby must become a moral creature, and win Father's approval through proper behavior. The girl must cope with losing the father to the mother, along with dealing with God's unjust punishment of taking away her penis: "The girl must both initially 'lose' maleness, and then lose her father, another of the recurrent tragedies of the human condition."

Adolescence brings the "phallic" stage. The boy becomes disenchanted with his father's omnipotence. He gives up the mother as object of love and seeks another female object. "There is a 'hard-bitten' quality about a man in having made a final hard bargain to possess his manhood, and it is the more jealously possessed for this reason." However,

> *If the male child relinquishes neither his own fantasied omnipotence nor the fantasied omnipotence of his father, and if he cannot enter into his male heritage of limited and contingent potency, he can become locked lifelong in the phallic 'paranoid' stance. Who has the omnipotence—prophet-mouthpiece of male mana, or God!. . .*

> *The vatic personality, in sum, is the individual driven by inner need and conviction to speak with the voice of god, as if the voice were not his own. Hence the prophet is psychologically parasitic upon a supposed external omnipotence that is really an equally fictive internal one. Every paranoiac is a god in person, every god a paranoiac projected into space.*
>
> *—La Barre*

A corresponding analysis of the girl is missing from La Barre's narrative (significantly missing, I would say). He ends his chapter by stating emphatically that science is *not*, in any sense, magic or religion, and with a passionately anti-mystical plea:

> *Is it necessary to impute one's having been created, and ultimate death, to the whole uncreated and undying universe? Is it possible that the nature of Being is simply to be, without beginning or end? Does my loved father yet live? What anthropomorphic arrogance is it that steals the essence of cosmic eternity and absurdly imputes it to our immortal selves! Must we always confuse the attributes of man and of the universe!*
>
> *—La Barre*

(A most worthy opponent, indeed. I bow. A refutation, in order not to fall into the very delusions of which La Barre speaks, must be highly subtle. One place to begin might be with the matter of "one's having been created." This must be examined closely. And it should be clear that abstract concepts, such as "at birth," or "at conception," or "at 49 days after conception," or even "God," are inadequate, in this context.)

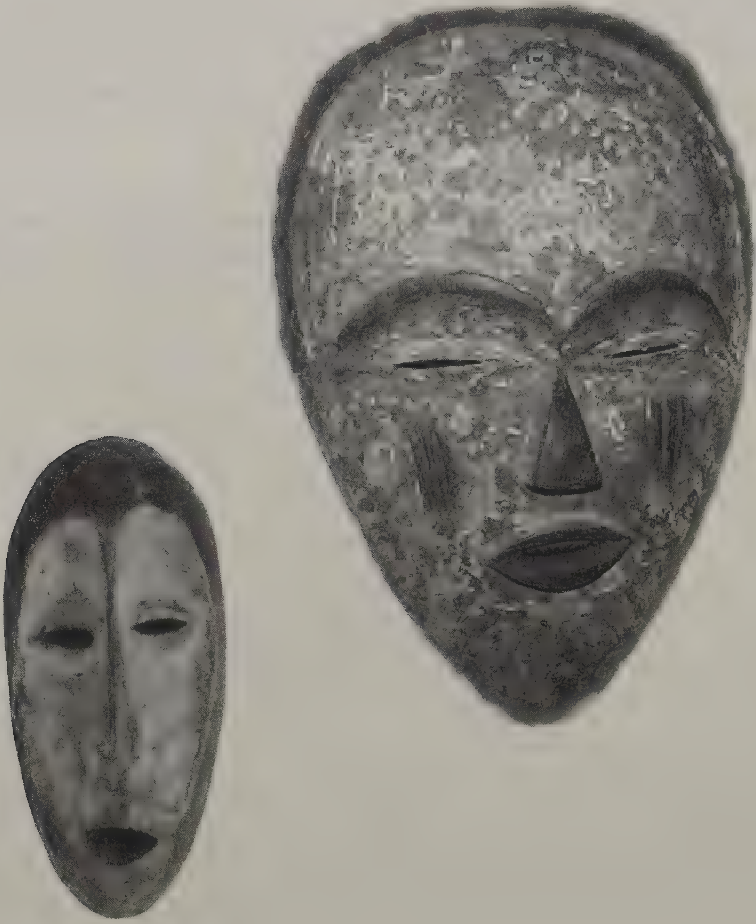
The Plant

That indefatigable Italian ethnobotanist, Giorgio Samorini, underwent an iboga initiation in Gabon in 1991.

> *The effect of this heavy dose of iboga lasts three whole nights and days. During this time, the initiate remains stretched out on the ground inside the vestry of the temple and is overseen by an initiated couple, a man and a woman, considered as the 'mother' and the 'father' of the initiation. The person being initiated will have to respect and regard them as his/her second parents for the rest of his/her life.*
>
> *—Samorini*

The *ngoze*, the customary night ceremonies, are held on specific Saturday nights and on Christmas and Easter, according to the Bwiti religious calendar.

> *These are times of collective religious fervor and joy and feasting, they are prepared for communion with the iboga and for a close understanding among all participants.*
>
> *Throughout the night the participants dance, play and sing. They dress in different colors, white, blue, yellow, according to their particular sect or the day of the week. With their faces made up with white kaolin, they fall under the effects of the iboga and dance long and exhaustive dances of the most pure African tribal spirit.*
>
> *—Samorini*



BWITI & VUVI MASKS, GABON

The Ghost Dance

The inarticulate mass of men must express themselves through the new-styled man most capable of assuming his and their responsibility before history. Sometimes society does not recognize itself in the man it creates, much as the painter's model may be shocked by his portrait. But the gods that get invented are only images of the shaman's self. Reciprocally, he is compassion: the shaman differs from the idiot-monod psychotic because of the shaman's pseudo-fatherly social concern for people in some therapeutic, political, or economic way; he is identified by stress-infantilized personalities with a child's-eye view of the omnipotent father.

—La Barre

(Maybe it's the language that is most abrasive: it evokes a smell of ether and white coats and mussed diapers and the "retard" jacking off in his chair. It has the imperious disdain of Nietzsche but none of his madness—his crying and bawling, hanging onto the neck of a beaten horse.)

The Plant

In one version of the syncretic Bwiti mythology, as reported by Samorini, the Holy Trinity consists of Nzamé, Gningone, and Noné. Noné is the evil one, the Devil. Eve conceived her first child with Noné, who entered her vagina in the form of a serpent, which resulted in three children: a White one, a Black one, and a Red one. It was only after this first copulation that Adam and Eve united in flesh. This was the Original Sin because it was incest. Eve brought forth twelve children who were the Twelve Tribes of Israel and the Twelve Apostles. Noné's children were the monkeys. After Cain killed Abel, Cain fled to the forest where he mated with a chimpanzee, who gave birth to the Pygmies. Abel is the first ancestor.

It should be noted that, in other contexts, the Fang acknowledge their debt to the Pygmies as the people who saved them when they were wandering in the forest and also as the people who first gave them iboga.

Signatures

It was common for Banzie (Bwiti members) to visit other chapels. This led to Bwiti becoming a pan-tribal locus. There was no formal Bwiti organization above the local chapels, and, as anyone who has tried to maintain a psychedelic circle knows, the commingling and intersections of the various local groups created continuing challenges to the communities in maintaining "one-heartedness," or "speaking with one voice while thinking many thoughts." For this reason certain social and ceremonial skills were highly regarded. The Fang distinguished between one who breaks disputes (*abuk adzô*) and one that slices them (*akik adzô*). The distinction is based on the nature of work in the forest, where things need to be cleanly cut to be able to be reused in making new objects. A Fang proverb is "The thinker is the child of the hunter." The Fang concepts of "thinking" and "knowing" have to do with being able to wend one's way through the forest, pausing and reflecting on the way one has come in order to proceed without getting lost, and to the ability to read signs where there is no trail.

Another challenge to the leaders was maintaining a balance between community work and outside cash work.

The Plant

Daniel Pinchbeck describes eating iboga in *Breaking Open the Head*. Pinchbeck answered an ad on a website from a botanist who, for a fee, offered introduction to a Bwiti temple. The "King" of the temple's fee was another $600. On arrival, the "King" demanded yet more, and some hours of shouting and threats ensued. After the ceremony, during which Daniel had visions, the "King" again began shouting and demanding more money.

Iboga tourism. Get it while you can.

Pinchbeck attempts to understand "the amazement" through Walter Benjamin, who realized that thinking was a form of intoxication:

> *The dialectics of intoxication are indeed curious. Is not perhaps all ecstasy in one world humiliating sobriety in that complementary to it?*
>
> *—Walter Benjamin, in Pinchbeck*

The Ghost Dance

La Barre believes that all religions have their origins in a crisis cult.

In the Cargo Cult in Oceania, the believers built tiny replicas of ships, believing that if they sat around them and waited, the gods would then bring them the treasures and power of the foreigners. In South Africa, in 1856, a young Xosa girl was told by some strangers from the spirit world that if all the people would slaughter their cattle and destroy their stores of grain the English would disappear and an earthly paradise would ensue. What ensued was mass starvation.

These movements have also been called "nativistic cults." They are often chiliastic, believing that a "second coming" or a "new age" is at hand. But La Barre takes it further, and shows how reification of symbol is itself a ghost dance.

> *If we reify 'Personality' in the individual, we then have some mystic and unreal locus of unconditioned free will or 'soul'—in the general region of Descartes' pineal gland?—when, actually, all we have is a (culture-) conditioned (biologically-) given organism. It is well to be tidy about these basic things and to remain clear about where they are located. Again, if we reify 'Culture' then we have no place to put it except in some equally ghostly 'Group Mind' or perhaps, part of it anyway, in a mystic Jungian 'Group Unconscious' wherever that lives. Thus we have on the one hand the Platonizing theologian, an unsound psychologist, anxious to preserve the unreal basis of his sacred culture (the God-Soul); on the other, the Platonizing 'culturologist,' an unsound anthropologist because he ignores the existence of his subject matter, man.*
>
> *—La Barre*

The Plant

> *Eboga is taken in two ways. (1) At each engosie [the regular chapel meetings] it is swallowed in small doses of two to three teaspoonfuls for women and three to five teaspoonfuls for men before and in the early hours of the ceremony. There may be an additional several grams eaten at mid-course, after midnight. This represents ingestion of between four and twenty grams of powdered eboga. (2) Once or twice in the career of a Banzie a massive dose of eboga is taken for purposes of initiation and to 'break open the head' in order to effect contact with the ancestors through collapse and hallucination. . . . This represents an ingestion of between two hundred and one thousand grams, up to sixty times the threshold dose and, in the upper reaches, close to a fatal dose.*
>
> *—Fernandez, Bwiti*

The Metsogo, the Fang's neighbors, claim the Fang aren't careful enough with iboga, and that they are not surprised there are fatalities. The Metsogo say that the dose must be built up slowly, over a course of days or weeks. (Daniel Pinchbeck, during his more recent visit to Gabon, heard from the Fang that the Metsogo were the "bad-ass Bwiti," and would pierce an initiate's tongue with a long needle and hit him on the back of the head three times with a hammer.)

Signatures

Special care was given to the dose administered to the harp player.

Effects

In light doses the stimulant effects predominate. There is a lovely intermediate dose where, on a hike through the woods, bushes and stones seem ready to divulge their hidden signatures. At an outdoor ceremonial party, I found it mostly confusing: it wasn't "what was happening." A young man who took a hefty dose of iboga at *Reggae On The River* reported waking up in the trailer of people he didn't know.

Poesis

The root of *Tabernanthe iboga* may contain 2.5 percent alkaloids, the root-bark as much as 6 percent. C. W. Jenks (*Nat Prod Lett,* 2002) extracted crude alkaloids with dilute acetic acid, which he filtered and dried to a stable brown solid. He obtained the HCl salt by dissolving the brown solid in acetone and precipitating with concentrated HCl, with a yield of 2.0 to 2.2 percent, which exceeded that of extracting with ethanol or chloroform.

The Plant

The purpose of Bwiti is to heal the individual and the community, to reestablish the bridge to the ancestors and to heal the rifts between men and women.

Ma zaba zaba ekôpe, Ekope! Ma zaba zaba ekôpe.
The vulva of the woman is the path of the spirit.

The goal of Bwiti is to assuage the problem of poverty, the problem of economic and political domination, the problem of ignorance and of dwelling in obscurity.

Ye mewuma ya yôbe tsenge bôtô a ntô biamo yengae.
The new plantations brought into being by Nyingwan Mebege,
they give the fruit of the rubber vine.

The purpose of Bwiti is to heal the problem of isolation and the breakdown of family life, to address the problem of death and the problematic relations of the corporeal with the spiritual.

A Tara Zame za' kule mbi. Oh! Oh! A Tara Zame za' kule mbi. Bot abui be nto mimbok—ka yen vyé. Engongol, Engongol! A mwan nima za' yen bwan bia.

Oh Father Zame come open the door. Oh Father Zame come open the door.
Many people have been held prisoner and do not see the light. Sadness, sadness.
Oh son of the first one come see your children.

—Bwiti hymns, in Fernandez

Pharmacology

Ibogaine, the principal (though by no means the only) psychoactive alkaloid in iboga is being used in addiction clinics. It is claimed that ibogaine "completely" relieves the highly unpleasant flu-like symptoms of heroin withdrawal. More, the ibogaine is said to be spiritually cleansing, and an excellent aid in breaking the cycle of spiritual malaise that usually accompanies such addiction. Attempts have been made to explain ibogaine's reputed ability to attenuate craving (for heroin, cocaine, amphetamine, alcohol, and tobacco) pharmacologically, but many of the results have been contradictory.

Ibogaine does not interact with serotonin receptors in the same way as the hallucinogens of the phantastica, and results of studies on various other subtypes of 5HT have not always been in agreement. The nature and extent of the serotonergic effects of ibogaine still seems to be unresolved (as of 2005).

There is no interaction of ibogaine with the GABAergic system (in contrast to *Amanita muscaria*), and little interaction with the cholinergic system (in contrast to the tropanes). Interaction with the dopamine receptors, an obvious place to look for a drug that affects addiction craving, is uncertain—some studies reporting little binding and others finding evidence of interaction with dopamine transporters. In general, ibogaine seems to attenuate the mesolimbic dopamine produced by drugs such as nicotine and morphine. In rats there is a gender difference in how ibogaine affects the terminal dopaminergic regions that respond to cocaine and amphetamine. Complex explanations have been offered to try to rationalize the sometimes contradictory results of laboratory studies.

Most of ibogaine's known action involves the kappa opioid receptor (like salvinorin, from *Salvia divinorum*), and the NMDA receptor (like ketamine). Much of the pharmacology is dosage dependent.

In general, preclinical studies support the anecdotal evidence that ibogaine "reduces self-administration of cocaine and morphine, attenuates morphine withdrawal, and blocks conditioned place preference produced by morphine and amphetamine" (Popik and Skolnick, 1998). These authors note that as harmaline, which shares many of ibogaine's pharmacological properties, notably excepting its NMDA antagonism, also reduces morphine and cocaine self-administration, this particular property may not involve NMDA.

In the United States, unfortunately, ibogaine is listed on Schedule I of the Controlled Substances Act, defined as having no medical value, and is felonious to even possess. The same is true of the plant. Because of these restrictions, only minimal research of this highly promising drug is being conducted in this country.

The Ghost Dance

It would be hard to find a more cogent and articulate exposition of the skepticist position than La Barre's *The Ghost Dance*. Still, one wonders how this consummate reductionist, so passionate in his beliefs, held his sarcasm in check for so many years to produce the careful ethnography of *The Peyote Cult*.

La Barre extends the dynamics of the ghost dance to nationalism and to slavish adoration of political figures, and half a century of history and change have only sharpened the relevance of his invective.

> *Tribalism, corporate-capitalist or Christian or whatever, is in time of necessity deeply anti-democratic in its ghost dance attempts to preserve a sacred status quo.*

> *It is now also anti-human, whether the bomb be used to make the world safe for capitalists, communists, or Chinese. . . . In America, where once Melville's Ahab battled his Leviathan, Tennessee Williams can write only of the impossibility of love, and others dramatize only the essential absurdity of life. Psychedelists drop out from society to some ineffable inner world, mixing LSD with studiously irrational Zen and a tireless cult of extra-procedural pure protest. And Rhine seeks God with dice and cards.*
>
> *—La Barre*

(And this man I considered my "enemy"!)

The Ally

> *In the old ways, the ancestors were recognized in the children, and a man might call his son "my father."*

Dancing down the path of birth and death:

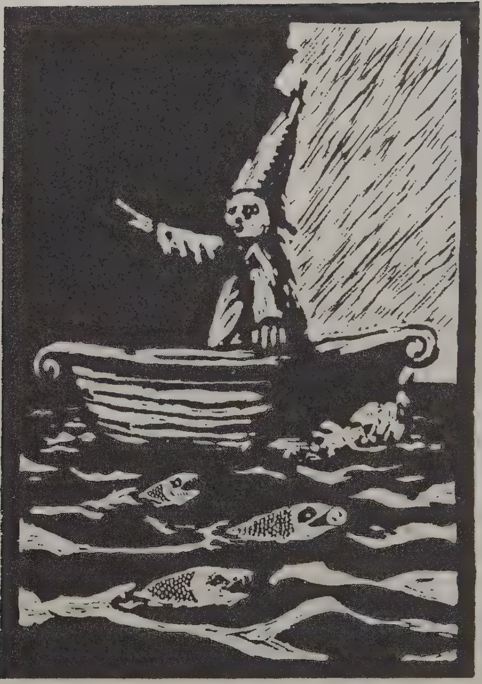
> *Sung-yuan Ch'ung-yueh (1139-1209) asked, "Why can't even the most bright-eyed monk cut the red thread between the legs?"*

A drastic invocation of harmony, when the people are scattered.
I am amazed. We are amazed together.

> *Ngombi e ntô mbamba étô. A taraoo! A sumena. A bobedzand e ntô mbamba étô. Mbamba étô mbembe.*
>
> *The harp has come to a good place. It begins, it starts up in its true place. Brothers and sisters, it has come to a good place, a good place forever.*
>
> *—Bwiti hymn, in Fernandez*

That in a New World we can live without oppression.

ARAPAHO GHOST SHIRT, CA. 1896



J. POPE

SWIMMING UPSTREAM

THE FOOL & THE LIE

Fool: *Sirrah, you were best take my coxcomb.*
Kent: *Why, fool?*
Fool: *Why, for taking one's part that's out of favor.*

—*King Lear,* 1,*iv*

The Fool is the parasite, who never works and sings for his supper. He is the raconteur, the jesting goodfellow.

He is also the scapegoat, the *pharmakos*, marginalized and blamed for the crimes of all. And the Fool is diversion, that one not look too closely at the King and his doings.

In ancient times, and even in the Middle Ages, fools were often dwarves. Sometimes a madman or a severely retarded person would be kept as a fool and scapegoat,. Execution of such persons still occurs in many of the American states—thus expiating the society of its sins and guilt.

Coercive and totalitarian regimes (which may hide themselves behind rigged elections) always depend on scapegoats, and large networks of prisons. There is no more characteristic mark of a police state than a large prison population. This fact is so obvious that it hardly needs elaboration. That the populations of such states often live in denial is a testament to the power of myth and propaganda, the power of the Lie.

The Lie is essential, because, ultimately, all governments depend on the people for their power. None can endure a general strike. Peaceful protests have brought down a dozen repressive governments in just the last twenty years, and in some of the largest and most advanced countries in the world. This is a better record, by far, than armed insurrection.

No government can survive a general strike. That is why organizers (and it doesn't matter whether they are involved with political parties, labor unions, or health care clinics) are the first to be targeted for imprisonment or execution.

When saying certain things, it is wise to wear a coxcomb.

The Fool, A Platonic Dialogue

THE PHILOSOPHER: It is natural for the superior to rule over the inferior. How could you even argue this point, my dear Glaucon?

GLAUCON: It makes sense, indeed, honored Teacher.

THE PHILOSOPHER: Yes, and for the master to rule over the slave, the husband over the wife, and those few of us who are wise over the vulgar.

GLAUCON: Won't the masses of people overtake us by shear numbers, if they know that we mean for them to be permanently subordinate?

THE PHILOSOPHER: Quite so, Glaucon, and that is why it is necessary for us to invent a Lie. But it is a Holy Lie, because we do it for the good of the State.

Our State shall have three classes. There are the Guardians, the Auxiliaries (along with the Merely Rich), and Those-Who-Work. The Guardians are only those of noble quality who have come to understand the great secret of the Lie, that in reality there are no gods, that the end—the preservation of our estate—justifies ANY means, and that bleeding-heart feelings of repugnance or shame are for losers and fools. Many shirk from this final step, and they must be weeded out and placed in the auxiliary class, if possible, or else imprisoned or killed. The Merely Rich will go along with us, if we give them a few rewards.

GLAUCON: Are all of the Guardians in agreement?

THE PHILOSOPHER: No, Glaucon, unfortunately, some divisions have arisen among us. Some think that our estate is best preserved by giving bread to Those-Who-Work. Others of us believe the same ends can better be achieved by expanding the Auxiliary Force. Surprisingly, this division among us has worked to our benefit, ensuring complete political control without it so seeming.

GLAUCON: Are the Fools, those who understand but won't join us, dangerous?

THE PHILOSOPHER: Indeed, as are the poets, and they will not be allowed in our Republic.

Kent: Where learned you this, fool?
Fool: Not i' the stocks, fool.

(Sigh.)

An early distinction was made between natural Fools, that is, the witless, and artificial Fools, those who only played the buffoon to gain admittance to the castle and cadge a free meal. The Church tended to condemn the articulate Fool, and in mystery plays the Fool was often conflated with Vice. In *Piers Plowman* (ca. 1380), the artificial Fool is called an instrument of the devil, as are those who feed and keep him. However, the Fool spanned both sacred and secular contexts, and flourished in the twelfth century.

> *Two of the most famous early Fools were not called Fool at all. Hitard, jester to the Saxon King Edmund Ironside was called joculator and Rahere, of Henry I's twelfth-century court, was referred to as a minstrel. Both were greatly rewarded by their patrons and enjoyed a degree of independence not to be known again by English Fools until the sixteenth century. It is interesting that both men felt called to end their lives in pilgrimage to Rome and each willed significant religious bequests. Hitard left Walworth to Canterbury and Rahere founded St Bartholomew's Hospital. Appropriately, therefore, the famous fair which was the great annual event at St Bartholomew's and which was to be the Fool's refuge for the next seven centuries, was itself founded by a Fool.*
>
> *—Sandra Billington, A Social History of the Fool*

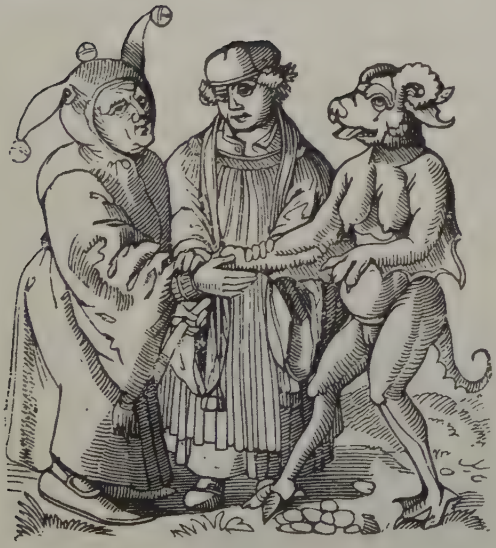
Fools were also leaders of games and ceremonies at festivals, of which there were many. The Church's attitude was ambivalent. Until the late middle ages, the Church had its own Feast of Fools, governed by the Lord of Misrule, in cap and bell. But similar festivities were associated with every Holy Day.

> *It is known that until now there has been the perverse custom in many place, where on any holy feast day wanton women and youthful fools gather together and sing wanton and diabolical songs the whole night through in the churchyards and in the church to which they lead their ring dances and practice many other shameful games. All such activity is to be prohibited with the greatest diligence, if it is possible. However, it is encouraged in many places for many men would not otherwise come to such feasts if they could not play games.*
>
> *—Thomas of Chobham, 1220, in Billington*

There were other reasons, besides short-sighted religiosity, for banning festivals—they were often foci of peasant rebellions. The festivals themselves were the real threat, not the fools who got naked, nor the music played, nor the potions imbibed.

This fellow's wise enough to play the fool
And to do that well craves a kind of wit.

—Twelfth Night, 3,i



FOOL & THE DEVIL, 1518

YDIOTA,
UKRAINE

Theologically, the Fool presented a problem, since Paul had said that Christians must be like fools, and referred to himself as a "foole." Christian folly was a means to salvation, yet the devilish aspects of foolery were all too obvious. Thomas à Kempis, Nicholaus of Cusa, and Desiderius Erasmus each wrote tracts on the Fool. The "Ydiota," in Nicholaus of Cusa's *Book of the Fool*, confounds philosophers, and tells them that it is they who are the true Fools if they think themselves wise.

The English were more hostile to the Fool than were the French. According to Billington, the 1540 English translation of Erasmus' *Praise of Folly* is highly biased, stressing only the virtue of the natural Fool, and that the poor should be happy with their station.

> *Big festivals, naked fools, and wanton women . . .*
> *spring ponies gallop full-speed, just for fun,*
> *while humorless men growl and plot in their cages.*

Ironically, it was the Enlightenment, the spread of Protestantism, and the rise of industrial capitalism that finally suppressed the big festivals. Barbara Ehrenreich (1998) points out that neither the Bourgeois revolutions in America and France ("Reason!"), nor the Bolsheviks, were friendly to festivals. Lenin even said he was grateful to the capitalists for having disciplined the working class.

> *Festivals are fun, gun battles are not.*

If the Guardians are now tending to withhold bread, the same is not true of circuses: passive entertainment is a sure way to keep people from getting together. And keeping large numbers of people from getting together in Dionysian spontaneity is essential to any coercive regime.

(It is so difficult to get it right, and thinking that one has it right is generally an error. Playfulness is a good sign, but, ultimately, we can't be sure. It comes down to placing a wager.)

> *The Grand Inquisitor is betting that circuses will satisfy. The Dionysian bets the Grand Inquisitor is wrong.*
>
> —*Norman O. Brown, Apocalypse And/Or Metamorphosis*

MOUNTAIN BLUES/ BLUE MOUNTAINS

Something about blue. Sky. Granite. Lake. Layers of blue. Cerulean blue. Willow pattern blue. Azure blue.

Blue is what there is when there is nothing behind it, nothing backing it up: the color of falling through, forever.

We are wrapped up together on the pads and sleeping bags, spinning through our worlds, yours and mine, limbs intertwined, wrapping like tendrils through one position, liking that, then shifting, the boundaries dissolving until we are blended beyond extrication. Then one of us pops a head up, and there is blue. Joyful blue. Perfect air blue. Turquoise blue. Bottomless blue. True blue.

I want to say "froisome." The word is, for now, unattested. A sense of freedom, a sense of flowing. Froisome. A gleeful, exuberant playfulness at the core of what is, and thus an ease. Frolic. *Frölich.* We, our thoughts, our chattering, the swallows, the way it just keeps

happening:

Froisome. That play is what the universe *is.*

> *Got a good thing going.*
>
> *Got a good thing going.*

And then we dive back under, to skin and visions, to particular worlds among the many possible worlds.

> *There was such a man, came here, long ago. His long white hair would fray out and mix and blend with the whiteness of the wispy clouds, with the white of paper, with the whiteness of the mist on Sesshu's Long Scroll.*

Blue is abiding, a quiet, "no comment" abidingness while we chatter. A permeating transparency, the cool air and the blue and the granite flowing through easily, like a cabin with all the doors and windows removed for summer.

Then the medicine quiets the breeze, and the stillness resounds like a large, unstruck drum. An absolute stillness, and the lake becomes a mirror.

Did we quiet it, or did *it* quiet us. And the sameness of those.

She's taken her clothes off. She's standing on the rocks above the lake and light flashes from her body—her sun, and skin: breasts and belly and pubis, arms and legs—subtle flashes with rainbow edges.

I kiss her, between her legs, and it is the rock that moves, threads connecting from her to the rock and back up through both of us. For a moment, the rock is her and all women. More light flashes. Surely anyone around the lake could see. And they do. She calls in a trill and a trill answers. The extent of our interaction. Such is the stillness.

Portents. Everything that happens is meaningful. And we joke about the leads we don't want to follow, the places we don't go. Cowrie shells clink through: the enfolding—leaf margins. Unfolding really, unrolling, like the margin is a scroll and the leaf the paper, and the scroll just keeps unrolling.

Nesting is enfolding, and nests are eddies—all the tiny particles extruding from the granite, each with a lee, a protected overhang, hang-outs for lichens and bits of stuff sensed but not seen. And molecules do it too: enfolding, wrapping up to catch energy in a vortex.

She says she is sure the birds are doing what she thinks—that they are an extension of her mind. I ask her if it might be the other way around, that it is the birds creating our thoughts.

In my pack, where I'm wondering how I can possibly find the object that I came to find, and, indeed, how I can remember what it even is that I came looking for. There is a silly book there: "The Fool."

> *Can it be said*
> *more plainly?*

In this great perfection, in this day of blessing, this day of blueness and rock and warm air and stillness so penetrating that it IS us, to spend even a fraction of a nano-second of a single cycle on "The Fool" would be foolishness indeed.

Grateful blue. Serenity blue.

> *Listen, I said, I'm a man of extensive psychedelic experience. I want to show you something really good.*

I roll a rather extraordinary orange to her. She digs her thumbs in and peels it. Miraculously, the peel comes off in one long spiral. And we eat. Tactile wonderment, exploding acids and flavors and juices, the succulence and sensual delight of a Persian palace, right here, on this granite.

> *The golden apples of the sun, I say.*

She asks me what I mean.

> *Oh, it's about a woman, I say, a very beautiful and graceful woman, fleet of foot, who did not wish to become the property of a man.*

And tell her the story.

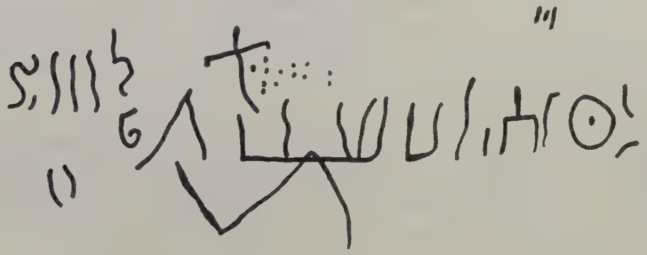
> *Got a good thing going.*

Got a good thing going.

Life as gift, the world as gift. Letting it out and taking it in. Letting light in—the true essence of plant medicine.

We talk about zipping the sleeping bags together. The task seems formidable. But I think I can do it.

"It's just a binary logic, how complicated can it be?"



I find a receptacle. It looks . . . inviting. Delicious, even. I find the thing end of the other bag. One thing end, at least—much too complicated to consider the possibility of others. I slide it in and pull the zipper part. It zips. I find another receptacle and another thing end and slide it in like I did the other one and pull on the zipper. Everything zips. We have one big bag. It's magic.

There ain't no screamin' way to make it right.
Sun going down now, it's going to be night

How many times did the day end? Shadows getting long. We finally get up and walk. Rock-hopping. Barefoot. How is it our feet find the rock and don't get hurt. I usually can't walk ten feet barefoot in rock or pine needles, and mince at every step. Now I can leap, my feet know where to go, my toes how to grip. I can balance, seemingly anywhere and on anything.

Look, Ma, no hands.

Not a ripple on the lake. We climb down to it and shed the last of our clothes. About five minutes of sun left and a chill coming. The lake surface isn't even there, there are just planes of transparency. We jump in. Towel off with our t-shirts.

We rock-hop our way back up to camp. At camp there is still a little sun. Other than the silent swallows, nothing physical is moving.

There ain't no bloody thing that you can do,
Sun's going down now, night be catchin' you.

We climb out to a promontory to watch the sun disappear. The colors begin to change but we wait for the darkening, but the darkening is in no hurry.

Finally, we build the fire and boil water and make soup. Neither of us feels especially hungry, but the soup tastes nourishing and we eat it all. There is a rosy alpenglow on the peaks. After that there is a sunset, a real sunset with rich and pulsing colors. And after that there is a twilight.

I make a fire ceremony: a blessing, calling to friends, and also to those estranged, by name. Making an offering of words to each in the fire, with words and with a stick. And letting it burn. Letting it go.

After a very long time it is dark. We walk over to the edge of the rock and look down at the lake. The whole sky is there, in the lake. I can see Scorpio, and the other stars and constellations. It's amazing. The lake is blacker than the sky; the sky could be a reflection of the lake.

> *There was such a man who came here. We remember. Long ago. He would cross the bridge and come here. Every night he would come. He would cross the bridge and come here and then he would unlock the gate. We remember him now, that you speak of him.*

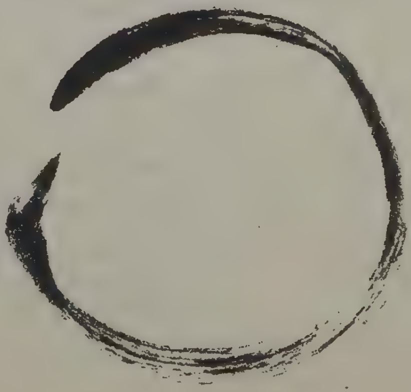
You called and pointed to a stick in the fire covered with picture writing. We could see Jackrabbit, Coyote, Big-horn Sheep. Like the petroglyphs on the boulders down the ridge, weathering into the natural lines and curves and erosion of the rock. And like the cursive scribblings I'd find on the sand when I'd go out onto the beach in the morning as a kid. Bug scribblings. Old scribblings. My scribblings.

> *There was such a one. For many years he would cross the bridge at night. His white hair blended with the Milky Way and perhaps that was the bridge that he crossed. He would come here, unlock the gate, and stay awhile. Then he would lock the gate again and cross back over the bridge. He did that every night so that we would remember, now, that there had been such a one, one who could cross the bridge.*

Later the moon rose.

Twelve hours of utter stillness. Others are maybe more colorful, or more wild, or more visionary, or more other-worldly, but no other ally has quite this aptitude for profound simplicity.

> *Still the standard, still the . . .*
> *(but one must not say, " best")*
> *Still.*



THE HALLUCINOGENIC PROPERTIES OF MAIZE

Rice sits crosslegged. Maize lounges,
stretches out on its back, head propped
against a backrest, one knee
raised and bent . . .

Rice sits crosslegged— hillsides terraced
into paddies — the nib-sized kernels
hanging above the water line
like a row of bowed heads.

Related Spp. Rice (*Oryza sativa*), wheat (*Triticum vulgare* and spp.), barley (*Hordeum vulgare*), oats (*Avena sativa*), rye (*Secale cereale*), sorghum (*Sorghum* spp.), pearl millet (*Pennisetum glaucum*), raggee millet (*Eleusine corocana*) are all cultivated grasses. Maize, also a grass, is *Zea mays*.

Several non-grass plants are also grown for grain: amaranth (*Amaranthus caudatus* and spp.), buckwheat (*Fagopyrum esculentum*), and quinoa (*Chenopodium quinoa*).

Part Used The seeds.

Method Ingestion.

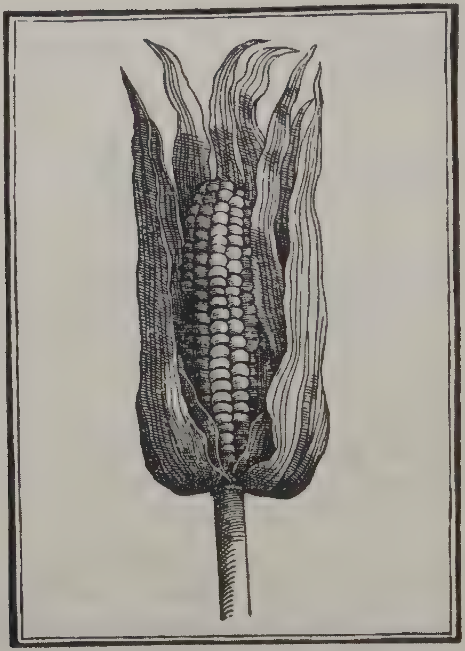
Chemistry Complex, highly active carbohydrate chains that trigger a massive physiological response.

Extremely pleasure-inducing: perhaps the greatest plant medicines known—maize and rice saving a billion people from starvation every day.

The High Deliriously subtle. Usually taken for granted and appreciated most when absent. Affects blood-glucose levels and secondarily adenosine triphosphate reactions throughout the body, essential for thermal stasis from oxidation, in turn supporting the grandest of all hallucinations. Fields of bosons, leptons, and energy are experienced as form and color, actually a completely arbitrary, if creative, mapping. Electromagnetic force fields, mediated by photons, are experienced as solidity. Even the experiencer is experienced—as a discrete entity called the "self." Something called "volition" is involved in a way that no one really understands. This is also true for perception, sensation, and memory.

The myth of sobriety is our fundamental delusion.

Seconds, anyone?



MAIZE, OVIEDO Y VALDÉS, 1535

The Girl in the Tree

One story is that the son of Hiawatha, Wunaumon, came upon a stranger on the prairie. The stranger was a short man, but plucky, and after exchanging a pipe of tobacco, Wunaumon challenged the stranger to a wrestling contest. After wrestling all day, Wumaumon finally threw the stranger. The stranger told Wumaumon to bury his body. Wumaumon did so, and soon green feathers emerged from the soil. This was corn.

From the empty air appearing,
Into empty air returning,

In Longfellow's version it was Hiawatha himself who gave us corn, by killing Mondamin in a wrestling contest. Hiawatha had been fasting and praying, but he prayed not for personal power but for blessings for his people—that was why Mondamin appeared to him. They wrestled for three days, and then Mondamin told Hiawatha that on the next day he would be victorious, and that he should bury his body and watch over it.

In another story First Mother saw that there was great famine everywhere. She begged her husband to kill her and to scatter her body. This he did, and from each place her body had been scattered corn grew. In another story a whole family went seeking a great vision to relieve the sufferings of the people, and they were transformed into corn plants.

In yet another story corn is a girl. A man was in love with her and slept in the woods near her wigwam to watch over her. One night he heard soft footsteps walk away through the forest. He followed, but the more quickly he pursued the girl, the faster she ran. When he finally overtook her and grasped her she changed into a corn plant with beautiful silky hair and golden earrings and uplifted hands.

At the Santo Domingo Pueblo on the Rio Grande, in August, the great Corn Dance is performed. The clowns, the Koshare, emerge first, black and white with their funny horns. Then the long lines of dancers emerge from the kiva, with rattles and turquoise and fir branches, with Sky and Cloud.

The Huichol understand that corn is deer's blood, that life, our lives and all lives, eat the deer, and are themselves the blood of the deer. That our lives are the result of countless generations of effort, sacrifice, courage, and beauty.

The Ally

You have come this far in the gnosis, far enough to doubt the reality of what seems, far enough to ascertain that consciousness and reality are in some way constructed, and thus plastic and alterable. One last little issue remains to be resolved: what part of it *is* real? And if it is all a grand hallucination, who is it that is hallucinating? There *must* be some part of you that is really you, some essence. . . .

Or is this too hallucination?

It's called "Reality" to lead us astray.
It's called "Dream" to confuse us.
Some call it "Mind," but who knows what that means?
Eating corn, drinking blood,
It's not silly to give thanks.

RICE, CHINESE ENGRAVING

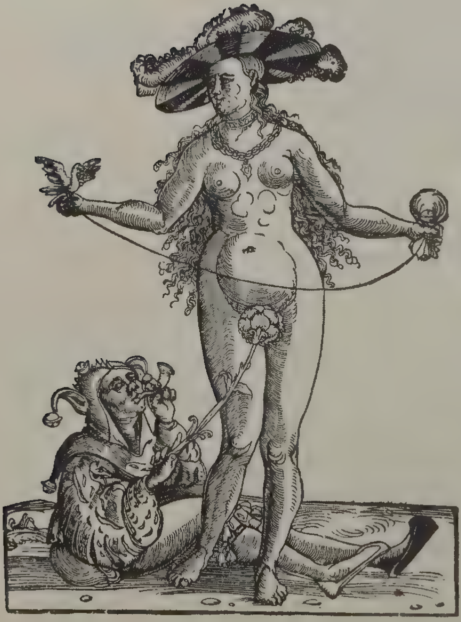
THE FOOL'S JOURNEY

We can look on the Fool as an "indicator species." As the Fool fares, so might we.

The Fool, then: Scene: a pot party in a small pad on the West Side. Two people on LSD. Everyone crowded into a circle in the small bedroom. Jon brigs out the dynamite shit. Or is it DMT? Whatever, it's off the scale. The Fool, coming off of his acid trip, already stoned, takes a big hit and holds it. . .

There seems to be a lot going on. Everyone is talking quite animatedly. Slowly, almost imperceptibly, the room seems to be dimming, except around the Fool. The Fool wonders if the others can see it—it's like a spotlight, on him alone. Then he knows that they do see it, because they start looking at him and talking about him, but as if he weren't there. At this point the Fool wishes he WERE invisible. Now they are laughing.

A girl has crouched in front of him.



FOOL & WOMAN

WHAT THE GIRL SAID: *Would you like a glass of water?*

WHAT THE FOOL HEARD: *Would you like to fuck me?*

This led him into a deep consideration. Well, yes, I guess so, but how to say it? It has to be said somehow with tact. And furthermore, it seems like there is some deep structure to Reality that has more to do with time than with words. That is, there seem to be these moments that have to do with *when* someone says something, and there are these micro-differences of when one responds, and they have different slopes, like tangents to a sine wave, and that *that's* what's really being said. . . .

Jon is saying something to the Fool from across the room.

WHAT JON SAID: *Hey man, how are you?*

WHAT THE FOOL HEARD: *We are all waiting for you to be reincarnated into your true form. We have all had this profound mystical experience already. It could happen to you at any moment, just as soon as you let it. But how long do you expect us to wait?*

This led the Fool to a deep consideration of the nature of epistemology. That not knowing had to mean that you don't know, because if you try to know that means you don't know. So maybe you have to stop trying to know. But then that just left him where he was, not knowing. There seemed to be a loop involved, but how to get out of it? Especially since it was the trying to get out of it that was creating the paralysis to begin with. And it wasn't really paralysis, it just looked that way. Actually, he was just busy, thinking. Isn't it OK to think? How did he get here, anyway? Now they're laughing at me. I don't know. See, that's what I mean. There seems to be a loop involved. . . .

Gifted with such deformity, what do you have to lose? The poison path awaits.

There are corpses along the trail.

The Fool, *thirty years later:*

Scene: a beach, a few windbreaks guyed and staked into the sand. A dozen people on mescaline.

The Fool feels a growing awkwardness, inching inexorably towards immobility.

Social graces, how do they know what to do? How can they all be so natural?
What is this in me?

Commentaries move around the circle. Goddesses add quips. The Fairy Queen brings a fragrance. The Dragon Cowboy lounges on his back, stroking his long Fu Manchu whiskers with a piece of driftwood.

You wait. Something passes. Your turn, that's what passed, and everybody knows. Now everyone has their heads bowed. There is a sadness. A micro-tragedy hangs in the air like a feather.

Your fault. It's your fault.

For us, then, the Inept, fortunately, there is still hope. Even in the Realm of the Totally-Fucked-Up, there is still a Buddha. This is the Buddha who teaches the Clueless Wisdom, the Great Path of Unknowing.

Wise and playful as the Devil is, the Fool is ever so slightly more promising.

It's our birthright.

Ahhh. Who said that?

Is it a Dunce, wearing a devil mask,
or the Devil, in a fools cap?

Diamond Lil dances, transforms herself from Earth Mother to Dakini before your eyes. You recognize something there. You laugh. You stand up and wiggle your butt, you Fool, you.

Shapeshifting Fool. Playing the margins Fool.
The Fool who rejoiceth. The Fool filled with gratitude.
A Fool come to repay the gods, to settle the debt.

With some luck, who knows, you might be graced to converse with one of the great poisoners of the past. Or of the future. As an equal. Would that not be pleasant?

It is very possible that there are only two of us still here. How many really understand the subtleties, the commitment?

By the way, I'm leaving.

That leaves you. Please continue. Try not to embarrass me by dying too young.

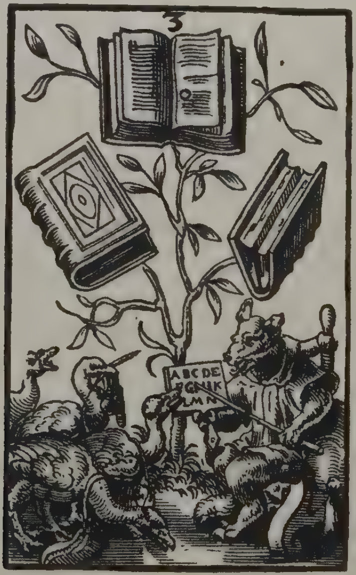
•

I am made to sow the thistle for wheat, the nettle for a nourishing dainty.
I have planted a false oath in the earth; it has brought forth a poison tree.
I have chosen the serpent for a councellor, & the dog
For a schoolmaster to my children.
I have blotted out from light & living the dove & nightengale,
And I have caused the earth worm to beg from door to door.

I have taught the thief a secret path into the house of the just.
I have taught pale artifice to spread his nets upon the morning.
My heavens are brass, my earth is iron, my moon a clod of clay,
My sun a pestilence burning at noon & a vapour of death in night.

What is the price of Experience? do men buy it for a song?

—Blake, Vala/4 Zoas



AMMON, 1588

APPENDIX I: THE CAULDRON

TETRADONTIDAE: BLOWFISH, PUFFER FISH

Thrill Seekers Enter Here

Every year in Japan people die from eating fugu, the blowfish. The usual number is five to ten, but as many as 48 have been reported, which is more people than die from "designer drugs" in the United States. Only specially licensed chefs are permitted to prepare the dangerous delicacy. When all the viscera are carefully removed, fugu is reasonably safe, if expensive. Accidents do happen, of course. The majority of fugu poisonings are in rural fishing villages, and are due to improper cleaning or cooking of the fish. Fugu chefs are forbidden to serve the liver, the most toxic part of the fish, but will sometimes relent to grant the wishes of a favored customer. The game is to get a sub-lethal dose—enough for the paraesthesia of the face and extremities, the feeling of lightness and floating, but short of the nausea, vomiting, and paralysis of the lethal dose. In 1975, one of Japan's "Living Treasures," the famous Kabuki actor Mitsugoro Bando, died after eating four servings of fugu liver.

Are we feeling lucky
tonight?

Tetrodotoxin, while best known from puffers, is also found in parrotfish, triggerfish, angelfish, goby, certain octopoda, seastars, sea squirts, ribbonworms, and arrowworms. On land, tetrodotoxin is in the skin of various salamanders and newts, and in several colorful tropical frogs.

A single milligram of tetrodotoxin can be fatal to an adult. It is 10 to 100 times more toxic than black widow spider venom, and 10,000 times as poisonous as cyanide.

The victim, although completely paralyzed and unable to speak, may be conscious and lucid until shortly before death.

Wade Davis discovered that blowfish toxin was an ingredient in zombie poison. Because of the paralysis induced by the tetrodotoxin, even doctors have pronounced some victims dead upon cessation of breathing, only to have them recover some hours later—in at least one case, in Japan, actually sealed into a coffin. Evidently, though breathing stops and the body cools down, the heart may continue to beat just enough to maintain life. One victim recovered at a crematorium, and remembered everything that had happened clearly.

Zombie power doctors, *not* wishing their victims to remember how they were brought back to life, add datura to the mix. Zombies are used as plantation slaves—minor brain damage makes them easier to manage.

Daddy, does television do that?

Tetrodotoxin clogs the sodium channel. The normal flow of sodium ions through the channel is measured in nanoseconds, whereas tetrodotoxin binds for tens of seconds. Mortality rates for fugu poisoning can approach 50 percent. Death usually occurs within four to eight hours.

Tetrodotoxin seems to be the product of a prokaryotic bacterium. A single mutation in the sodium channel protein gave blowfish immunity, and allowed it to form a symbiotic relationship with the bacteria. Puffer fish grown in culture do not produce tetrodotoxin until they are fed tissues from a toxin-producing fish.

The structure of tetrodotoxin was determined by Robert Burns Woodward, who received the Nobel Prize in 1965. Recently blowfish toxin has been used in pain management: "a powerful non-addictive systemic analgesic."

Shellfish poison, saxitoxin, is a closely related molecule that blocks the sodium channel with equal lethality. This is the poison investigated by the CIA as an assassination weapon. Saxitoxin is produced by cyanobacteria and concentrated by mussels and oysters, especially during the warm (or "non-r") months.

Mary Glowacki, in a recent article in *Antiquity*, speculates on the possible use of *Spondylus*, the thorny oyster, as a "hallucinogen" in early Andean society. Her evidence seems to be that the oysters were called "Food of the Gods," that the extraordinarily beautiful oyster shells were given as offerings to the god Maca Uisa, who is said to have eaten the shells with much pleasure, that during the red tide months of El Niño the oyster could be psychotropic, and, lastly, that it is well-known now that many ancient peoples used hallucinogens (and cites the usual authorities).

'Course, shellfish have been a favorite food of humans on the Pacific Rim for at least ten thousand years—some shell mounds are a hundred feet deep—*somebody* must have experienced the buzz. Unfortunately, no one else has called it "hallucinogenic."

I cannot see her tonight.
I have to give her up.
I'm going to eat fugu.

—Buson

MITRAGYNIA SPECIOSA: KRATOM AND THE ART OF DIMENSIONAL SMUGGLING

Kratom is in the Rubiaceae, the coffee family, and is native to Southeast Asia. Kratom has both stimulating and sedating effects, "like coca and opium together"—a rather enticing come-on. Perhaps it is not surprising that kratom is outlawed in Australia, Malaysia, Myanmar, and Thailand. In Thailand, where kratom is widely chewed by the mountain people, there are kratom-addiction clinics.

The opiate-like effects seem to be due to 7-OH-mitragynine, mitragynine, and similar alkaloids. The herb is available in several different grades, and the dosage depends upon the grade and the user's tolerance. Kratom is the only "opium substitute" that really is. I can think of no reason that kratom's addictive qualities should not be commensurate with its euphoria and analgesia—reports to the contrary are due, I would guess, to lack of experience.

But, hey, maybe there IS a non-addictive narcotic . . .

Users have various strategies to avoid becoming addicted: "never take it more than once a month," "never take it more than once a week," "never take it more than twice a week." All exactly the same words used by heroin chippers—and probably with the same curve of success/failure (with 50 percent becoming addicted in two years or one year or three years or whatever it is). Physical addiction is not the end of the world, of course. I mean, if the plant is helping you.

The Ally *Oh my.*
Another seductress.

Class Kratom is really in bed with the *euphorica*—maybe with a couple of feet sticking out. Maybe with one foot sticking out towards *thanatopathia*, like kava kava, which is what your tongue feels like when you drink the tea. Light doses (one to two grams, good stuff) do have a stimulating effect, but the same is true for opium. For me, anyway.

Effects Narcotic, analgesic, oneirophoric. And sociable, relaxing, pleasant, like all of its class. And, yes, a little like a "speed-ball." Large doses (4 to 5 grams of the good stuff) can cause nausea and vomiting, especially if taken all at once.

Kind of a longish "tail," the next day. Not really unpleasant, but present.

How Taken As a lightly bitter tea, maybe with a little lemon to aid the extraction of the alkaloids. As a quid, with some ground lime. Smoked. In a milkshake or in juice or whatever be thy fancy.

The Ally *Who needs poppies?*

Many kratom aficionados like to be alone for the heavier dream-time doses.

"Officer, I could walk a straight line if you could draw one that wasn't moving."

If you drink the tea over several hours, you can go on drinking more.

Effects Colorful hypnogogic imagery.

The Ally *I drove the truck around the house and parked it in some shade.*

It is quite possible that my client is not a lawyer at all, but merely represents lawyers.

An experiment to determine the best method to place a mental image in the mind of another.

When I stepped out of the truck I saw a small dead snake in the dry grass. It had been run over and was partly desiccated and had two lizard-like legs up near its head.

It's quite possible that my client, this plant, is not a lawyer at all.

If you use the back door (assuming it is unlocked) you can get back in without disturbing anyone.

How can those stars still be there when I have my eyes closed?

We can be subverted by a word, a signifier that creates a gate that defines us. By habit (and just keeping things easy) we generally step through it. But it is always an option to push over the whole gate.

(What was that line? I want to remember that line. And what was that, that just happened? Yes, and what was that line I wanted to remember?)

APPENDIX II: SUNDRY: MISC. SPP.

Notes on a few of the plants that were on my list when I started this project, and there remain.

BASIDIOMYCETES:

Mushrooms are their own and richly rewarding study. The diversity of forms brought forth by the fall rains is wondrous. The best summation is that of Coyote Man, at the end of the *Amanita* chapter.

The study of ergot, *Claviceps purpurea* (Fries) Tulasne, is far from complete. Wasson, Ruck, Greene, Webster, and others have suggested that an ergot-laced grain beverage may have been the *kykeon* served at the Eleusinian Mysteries, but despite the advantages of modern chemical knowledge, no such preparation has yet been demonstrated.

Gymnopilus spectabilis (Fr.) A.H. Smith is called the "Laughing Mushroom" in Japan. European strains, and many in North America seem to lack psychoactivity—a large and extremely bitter specimen that I ate in California produced no effects.

There are continuing stories of a psychoactive *Lycoperdon* (a puffball), though none that I've ever eaten have had any noticeable effect, other than gastronomic pleasure.

A bolete in New Guinea is reported to be psychoactive, as is *Russula agglutina* Heim, which produces "mushroom madness."

LYCOPODIACEAE:

Clubmoss. Closer to being a fern than a moss, other than in appearance. The clubmosses are often called "fern-allies."

Lycopodium selago L., "Fir Clubmoss," reported hypnotic. Possible shamanic use. I've collected this lovely plant twice from islands in Sitka Sound, and have been able to keep a little patch alive in a planter box, but I still have no idea as to how to approach it more intimately.

L. selago contains 0.1-0.9 percent alkaloids. The entire plant can induce vomiting, dizziness, wooziness, and unconsciousness (Roth et al., 1994, in Rätsch). Clubmoss was used as an amulet in Celtic traditions.

FILICALES:

Cheilanthes ferruginea, Cola de Zorra, is reported to be a CNS depressant and to be used in folk medicine as an anti-epileptic.

CONIFERALES:

Cedar (*Thuja* spp.), is of course rich in thujone (see Absinthe, *Pharmako/Poeia*). Juniper goes in gin. The yews (*Taxus* spp.) are insufficiently explored, many species having "toxic" qualities. The California Nutmeg, *Torreya californica* Greene, is also a little-explored tree.

HIMAMTANDRACEAE:

Galbulimima belgraveana (F. Mull.) Sprague, from New Guinea, is reported to cause stupor, hallucinations, and coma.

LAURACEAE:

Laurel family. Includes Cinnamon (*Cinnamomum* spp.), Sweet Bay (*Laurus nobilis* L.), and Sassafras (*Sassafras sassafras*).

Umbellularia California Nutt. California Bay-laurel. I can't think of any tree I've enjoyed living next to as much as this one. The wood is hard, dense, and aromatic. The leaves will clear your head in a hurry. In western California counties, this tree has become a host for the sudden oak death fungus.

RANUNCULACEAE:
Poisons everywhere, not a salad green in the whole family. Goldenseal, *Hydrastis canadensis* L. is in this family.

Aconitum spp.: Monkshood, Wolf's Bane, poisonous alkaloids aconitine and aconine.

Actaea spp.: Baneberry. Poisonous berries and roots. Red Cohosh, *A. rubra*, may contain an "hallucinogenic" substance. White Baneberry, *A. alba*, contains an unidentified hypnotic. Effects of poisoning include "intense pain, inflammation of the mouth, blistering and ulceration, bloody emesis ..." etc. Yum.

Adonis spp.: digitalis-like glycosides.

Caltha palustris L.: Marsh Marigold, Cowslip.

Cimicifuga racemosa L.: Black Cohosh, hypnotic.

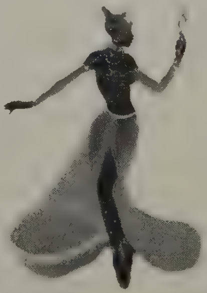
Clematis spp., virgin's-bower, east of the Cascades south to California; a beautiful climbing vine, worthy of study.

Delphinium spp., the larkspurs, hypnotic, delphinine, pelphinedine, ajacine.

Helleborus niger L., dermal irritants and toxic glycosides hellebrin, helleborin, helleborein, producing pain in mouth and abdomen, emesis, diarrhea, cramping.

Ranunculus spp., little buttercups. *R. acris* L. reported deliriant.

BERBERIDACEAE:
Includes Barberry and Oregon Grape (*Berberis* spp.) and *Podophyllum peltatum* L., often sold under the name "Mandrake." *Caulophyllum thalictroides* (L.) Michx. is called Blue Cohosh and contains the alkaloid methylcytisine, along with glycosides. Caulosaponin provokes strong uterine contractions, and Indians used Blue Cohosh as an emmenagogue.



NYMPHAEACEAE:
Nymphaea spp., the Water Lilies, are rich in lore and magical history. Blue Water Lily was sacred to Osiris. *Nymphaea ampla* (Salisb.) D.C. said to contain aporphine, nuphine, nuciferine, and nupharidine, and to have hypnotic effects. Both the phytochemistry and the pharmacology deserve more study.

MALVACEAE:
Cotton, Hibiscus, Okra. Some genera have bitter bark. The Hupa basket-maker Jo Peters called one (unidentified) species in this family the "cancer plant," and used it to treat a member of her family.

Rätsch includes *Sida acuta* Burm. and *Sida rhombifolia* L. in his list of marijuana substitutes.

Malva, another weedy genus, is worth checking out just because of its hardiness and tenacity.

PASSIFLORACEAE:
As mentioned briefly in the Jurema chapter, various *Passiflora* species contain harman and other alkaloids. Their role in the human pharmacology of the jurema brew is still uncertain.

EUPHORBIACEAE:
A family with milky sap rich in medicinals. *Alchornea floribunda*, mentioned in the Iboga chapter, is a Euphorb, as is cassava, or manioc (*Manihot utilissima* Pohl.).

Eremocarpus setigerus (Hook.) Benth. Turkey Mullein. Stinging hairs. Used as fish poison. Sap for warts. Nasty enough to get to know better.

Ricinus cummunis L., Castor Bean plant. Highly toxic seeds.

Elaeophorbia drupifera (Thonn.) Stapf., called *kankan* or *dodo* is reportedly an ingredient in visionary eyedrops administered during Bwiti initiations, which is probably why Schultes and Hofmann included it on their list of "plants with alleged hallucinogenic effects."

CRUCIFERAE (BRASSICACEAE): About the safest family I can think of to mess around in without knowing what you are doing. Crucifs are easily recognized by the characteristic cross-shaped flower and the silique/silicle seed pods.

AIZOACEAE: the iceplants.
Sceletium tortuosum (L.) N.E. Br., and other *Sceletium* and *Mesembryanthemum* spp.

Used by the San (the Hottentots) of southern Africa to produce enjoyment, intoxication, and delirium. Lewis Lewin doubted that the effects could be due to *Sceletium*, and thought that the observer (Kolbe) confused *Sceletium* with *Cannabis*. Rätsch reports that *Sceletium* is now used as a party drug in South Africa. Many species of *Sceletium* and *Mesembryanthemum* contain the alkaloid mesembrine, generally considered a sedative. The fresh leaves are said to be inactive—a complicated preparation is needed to bring out the full psychoactive properties. This involves "fermenting" the crushed plant in a sealed container for several days, then drying the wet mass in the sun.

> *The South African users describe the important effects of small dosages of kougoed [S. tortuosum] as relief from anxiety and stress, deepening of social contact, increase in self-confidence, and dissolution of inhibitions and feelings of inferiority.*
>
> —*Rätsch, 2005*

The effects are much enhanced when combined with *Cannabis sativa*, of which mixture the San would heartily approve.

POLYGONACEAE:
Curly Dock (*Rumex crispus* L.), and Knotweed (*Polygonum aviculare* L.) are common roadside weeds. There are scores of wild buckwheats (*Eriogonum* spp.), some reported to be poisonous, that are worthy of investigation.

CHENOPODIACEAE:
A scruffy lot. The edible lamb's-quarters (*Chenopodium album*) is in this family. Many Chenopods specialize in surviving in extremely harsh and marginal environment—some of them can live on salt flats and alkali sinks (like the Black Rock Desert), and even in salt water marshes (*Salicornia*). Reason to love them just for that.

But there may be more to the goosefeet than we know. I spent a good hour looking around by my barn for a dead animal that I could smell. Sometimes I thought it might be a dead deer, some distance away, in the brush or thickets along the stream. Other times I thought it was a rat that had died in the woodpile. This happened many times. Very strong, almost overpowering smell of a dead and rotting animal. Skatoles. Cadaverine. Or other amines. But nitrogen, most certainly. Then, one day, pulling some weeds, I thought I had nailed it: Knotweed, *Polygonum aviculare* L. I had a pile of it and it stank to high hell. Solved. Except for the chemistry.

That was a year ago but it happened again this year. Some days the smell was so overpowering that I had to close my windows. But this year it's not knotweed. Again, pulling weeds, I thought I had it: *Brassica nigra*, black mustard. A pile of them were so putrid you didn't want to get within six feet. I had to wash my hands with soap three times to get the smell off, and even then I could still smell it around my fingernails. *Brassica nigra*, black mustard, is a very common weed, all over the place. But it doesn't usually smell like this. What's going on? And how was it that I was so certain last year that the source of the smell was knotweed? And why is it only at certain times of the afternoon? I started wondering if there was something buried in the soil, some hazardous waste, or, well,

> *the Corpse. . . the one from the Dream.*

That murder that you thought you got away with, now coming up to expose your crime to the world. And of course there is Eliot:

> *That corpse you planted last year in your garden,*
> *has it begun to sprout?*

But it's not the *Brassica*, it's a *Chenopodium* sp. that was hiding and mixed in with the others and had transferred the smell to them by contact. The plant keys out "kind of close" to *Chenopodium ambrosioides* L. Under the microscope it is the most amazingly glandular plant I have ever looked at—tiny spherules cover the leaves, stems, and inflorescence—some of them on tiny stalks. The fused sepals form a little cup and the two-styled ovary sits in a bath of some odoriferous liquid.

I call it the "cadaver plant." Next year I'm going to figure out how to get it into a bottle.

AMARANTHACEAE:
Alternanthera lehmannii, and *Iresine* spp. are both sometimes added to ayahuasca brews.

PHYTOLACCACEAE:
Pokeweed, *Phytolacca acinosa* Roxb. and *Phytolaca Americana* L. are reported to be hypnotics.

NYCTAGINACEAE:
Mirabilis multiflora (Torr.) Gray, "so'ksi." Alfred Whiting, in *Ethnobotany of the Hopi*, 1939, reported that the root of this plant was chewed by Hopi healers to obtain diagnostic visions. If the plant does have psychoactive properties, people are keeping very quiet about it.

ERICACEAE: the large heather family, specializing in acid soils and urn-shaped flowers.

Andromeda mariana. "Stagger-bush." Just a clue.

Arbutus menziesii Pursh. Madrone. Bark smoked by some California Indians.

Arctostaphylos uva-ursi L. Kinnikinnick. Hypnotic, added to smoking mixtures.

Chimaphila menziessi Spreng. Pipsissewa, Prince's-pine. Related species have names such as Rat's-bane, Dragon's-tongue, Bitter wintergreen, King's-cure, Love-in-winter.

Gaultheria procumbens L., Wintergreen. A traditional root-beer ingredient, and was part of my own *Osceola Spruce Root Beer*. *Gaultheria procumbens* L. grows in the Andes, in Peru. *G. shallon* Pursh., is called Salal in western North America, where it is common in redwood understory.

Kalmia latifolia L., Mountain Laurel. Reported narcotic. *Kalmia angustifolia* L. is also called Lambkill.

Ledum glandulosum Nutt. Labrador Tea. Jo Peters warned me "Don't pick any azalea by mistake, or you'll get sick" (Pendell, *The Gold-Dust Wilderness*, 1971). Wild Rosemary (*Ledum palustre*) is said to be preferred by the Tungus to *Amanita muscaria*, the Fly Agaric. According to Xenophan, honey from *Ledum ponticum* poisoned an entire Roman army in an unfortunately delicate situation. The smoke of *Rhododendron caucasicum* is reported to be inebriating.

Leucothoe spp. Dog Hobble, Dog Laurel. Poisonous grayanotoxins in leaves and honey.

Manzanita spp. The berries are a favorite of coyotes, and of little dogs pretending to be like them.

Monotropa uniflora L., sometimes placed in the Monotropaceae, is reported to be a hypnotic and an opium substitute.

Pernettya spp. Additive to *chicha* and other beerish brews. "Drunkenness plant."

Vaccinium uliginosum L. Bog Bilberry. Hypnotic, unidentified neural toxin.

LOGANIACEAE:
Gelsemium sempervirens L. (Ait.) Yellow Jessamine, is reported to contain nerve poisons, causing double vision.

APOCYNACEAE: The favorite family of commercially-minded ethnobotanists. Start almost anywhere. With care. Maybe with periwinkle. Chronic use of the Madagascar periwinkle, *Catharanthus roseus* Don., reportedly causes severe damage to the central and peripheral nervous systems.

Thevetia thevetioides, yoyotl, may have been the plant blown into the faces of sacrificial victims by the Aztecs to stupefy them.

ASCLEPIADACEAE: Milkweeds. Some species fatal to sheep. The Soma-plant, *Sarcostemma acidum* Voight, is a milkweed.

CONVOLVULACEAE: Morning Glory family. The properties of many *Ipomoea* spp. are well known. Bindweed, *Convolvulus* spp., are less studied.

POLEMONIACEAE: The phlox family.
From somewhere in my youth I left myself this recently uncovered note: "Those who enjoy making a display of erudition could spend many happy hours engrossed in Polemoniaceae." The taxonomy, I must have meant.

SOLANACEAE: Wild tobaccos, wild nightshades.
Brunfelsia spp. are not yet well characterized.

Cestrum laevigatum Schlecht., "Lady of the Night," is reportedly smoked like marijuana in Brazil. Other psychoactive nightshades include *Iochroma fuschioides* (H.B.K. Miers), *Latua pubiflora* (Gris.) Phil., and *Petunia violacea* Lindl. *Withania somnifera* (L.) Dunal., the ayurvedic tranquillizer, is a nightshade.

SCROPHULARIACEAE: Figwort family.
Monkey-flower and Indian Paintbrush and *Penstemon*. Lots of *Penstemons* and some of them with very interesting smokable leaves. Also *Orthocarpus*, and *Pedicularis*. And, yes, of course, Foxglove, *Digitalis*.

BIGNONIACEAE:
Tanaecium nocturnum (Barb-Rodr.) Bur. et K.Schum., containing saponins and cyanogenic glycosides, is a reputed aphrodisiac.

ACANTHACEAE:
Mostly tropical shrubs, with many pleasing ornamentals. The flowers are often two-lipped. An extract of Sea Holly (*Acanthus ebracteatus*) is used as a cough medicine in parts of Malaysia.

Justicia pectoralis Jaq. was reported by Schultes as an additive to epena snuff, and to contain DMT, but this has not been confirmed. Hallucinogenic effects are generally denied, very occasionally confirmed.

VERBENACEAE:
The Romans called vervain (*Verbena officinalis*) the "Herb of Venus," and the plant has been used in amulets by magical traditions.

LABIATAE (LAMIACEAE):
The discovery of the astonishingly powerful non-alkaloidal diterpene, salvinorin, in *Salvia divinorum*, opens up this whole family to deeper investigation—balms, hyssops, skullcaps, sages, catnips. And what delightfully fragrant work! *Lagochilus inebrians* Bunge., the "Intoxicating Mint," certainly has the right name! *Ocimum micranthum* and *Ocimum sanctum* are reported to be a combination "barbiturate/amphetamine."

SAXIFRAGACEAE:
Hydrangea leaves have been reported as "stimulating," and as a marijuana substitute. The latter claim is definitely a pipe dream. But they do do *something*. But then, what smoked leaf doesn't? And some of the effects are probably from carbon monoxide.

ROSACEAE:
Another very large and diverse family.

In *Prunus*, of course, especially bitter almond, there is the touchy matter of cyanide. As an example of just how *really crazy* this study can become, a co-worker at a precious metals refinery once told me during a break, "in small quantities, cyanide is actually kind of nice."

Siegel (1989) reported that birds become inebriated from eating toyon berries (*Heteromeles arbutifolia*).

LEGUMINOSAE (FABACEAE):
The acacias are rich in tryptamines. *Erythrina* spp. contain isoquinolines, indoles, and colorines, and are dangerous and in need of investigation. *Rhyncosia* spp. contain cystine. There are hundreds of lupines and locoweeds—a fortune awaits. (Yes, and Scotch Broom still waits, covering the hills where there has been a burn.) *Mucuna pruriens* (L.) DC. is reportedly an aphrodisiac.

Zornia latifolia DC. is reported to be smoked in Brazil.

MORACEAE:
A cannabis-like latex is reported from *Helicostylis tomentosa* and *H. pendunculata*.

Maquira sclerophylla (Ducke) C. Berg may have hallucinogenic effects.

LYTHRACEAE:
Heimia salicifolia (HBK) Link and Otto: Sinicuichi. Rätsch wonders if the supposed hallucinogenic effects of this plant are being generated by a morphogenetic field created by Calderón who first described the plant's effects in 1896. Confirmatory reports continue to appear from time to time, but, considering the fairly large number of experienced

psychobotanists who ingest this plant, the effects (yellow vision, auditory hallucinations) are best called "elusive."

Still, it is a lovely plant. All of "us" grow it.

ONAGRACEAE:
Fireweed (*Epilobium angustifolium* L.) is used with *Amanita muscaria* in Siberia as a hypnotic.

RHAMNACEAE;
Mountain lilac, *Ceanothus* spp., is in this family. *Ceanothus* is a large and dominant genus in chaparral and other biomes. *Ceanothus velutinus* Dougl., Snowbrush or Tobacco-brush, can form large thickets near the summits of peaks in the Trinities in Northern California. The leaves are glossy and resinous and have a strong balsamy odor and were used by local Indians as tonic and tobacco. A good plant to know.

Ceanothus integerrimus H&A, the well-named Deer Brush, is common in the Sierra Nevada from 1000 to 5000 feet elevation. A sister plant, *C. cuneatus* (Hook) Nutt. is called Buck Brush (the specific epithet is from the shape of the leaves). Buck Brush is spinose and decidedly stand-offish. All of them can be pretty impenetrable when they really dig in.

Rhamnus californica Esch. is the Coffeeberry plant, related to cascara (*R. purshiana*), the laxative and purgative. There is something comforting about having this plant around. Maybe it's just the name, of course. . .

LORANTHACEAE:
Phoradendron spp.: mistletoe. Berries said to be poisonous (they contain tyramine and toxic proteins). Plants generally considered parasitic, but symbiotic benefits to the oaks and other hosts need to be explored further. Of ancient magical virtue, the extremely dense wood is still prized by magically inclined artists. Chewed leaves can relieve toothache. James Duke notes mistletoe as oxytocic, efficacious in arresting post-partum hemorrhage.

ANACARDIACEAE:
The most notorious members of the sumac family are poison oak and poison ivy, the guardians of shady glens. Other sumacs include Laurel-sumac (*R. laurina*), Lemonadeberry (*R. integrifolia*), Sugar-sumac (*R. ovata*), and other wondrous and hard-working plants. A South African species, *Sclerocarya caffra* Sond., is reported to be hallucinogenic. Frightening and obvious experiments come to mind.

SAPINDACEAE:
Both *Nephelium topengli* (Merr.) H.S.Lo and *Ungnadia speciosa* Endl. contain cyanogenic glycosides and have hallucinogenic reputations. Safe preparation (if there ever was one) is now lost.

CORIARIACEAE:
Coriaria thymifolia Humb. and Bonpl., "Shanshi." Rocio Alarcón said that she ate the berries as a child and "went flying." Scott Hajicek-Dobberstein reports similar effects (personal communications). Native to the middle slopes of the Andes.

RUTACEAE:
Casimiroa edulis La. Lla. v., reported sedating hypnotic.

HIPPOCASTANACEAE:
Aesculus spp. Horse Chestnut, Buckeye. Hypnotic, fish poison, abortifacient. California Indians used the large seeds as famine food, which are edible if roasted and leached. Acorns were preferred. *Psilocybe azurescens* mycelium will colonize a pile of buckeye wood chips.

ARALIACEAE: the ginseng family.
Hedera helix L. Ivy. Contains saponins, including hederin. Sacred to the Egyptians and to Dionysus, who was wreathed in ivy as an infant. Another story is that a girl, Cissus, became so overcome with ecstasy, dancing in front of Dionysus and kissing him, that she killed herself, and ivy sprang from the spot. Others say that ivy is a symbol of sobriety, and that thus the Dionysian intoxication may be *sobria ebrietas*, the Grail of all True Philosophers.

Oplopanax horridum (Smith) Miq. Devil's Club. A difficult plant to get close to. Reported shamanic use in Alaska. Many medicinal uses, especially in topicals. Jean Longstreth of Back Bay Botanicals, Sitka, makes a particularly good Devil's Club salve.

UMBELLIFERAE (APIACEAE):
The poison-filled carrot family, with hemlock (*Conium maculatum*) the best known. It has a mousy smell, distinctive purple-splotched stems, and is common along ditches. Coriander is an umbel. Many species are medicinals, such as *Hydrocotyle asiatica*, Gotu Kola or fo-ti-tieng.

Sanicula spp. are common weeds, and *Sanicula bipinnata* is also called Poison Sanicle.

Torilis arvensis, Hedge Parsley, Beggar Ticks.

I believe this plant is destined to take over the world, at least the temperate zone. I collected it in Santa Barbara in 1971, and it was one of the first plants I ever keyed out (*DP #12*). Or tried to. I kept arriving at *Torilis arvensis*, which Munz noted as "from Europe, naturalized in nw. California." I asked my botany professor about it. He also keyed it out to *Torilis arvensis*, and asked me where I had collected it.

"Along the curb in front of my apartment."

The professor looked at the seeds again. "Looks like a pretty good hitchhiker. Did you make any trips to northwestern California last year?"

Which of course I had. After that I felt terrible that I had uprooted what was probably the only specimen of *Torilis arvensis* in Santa Barbara County.

I found more of it in Humboldt County the following year. It was still early summer, the plants were still green, the terrible bristles hadn't matured on the seeds, and I felt friendly towards the plant. I even wrote a collecting song for it:

Ripping your leaves off gently, pulling downwards

I also smoked the leaves. It was the most amazingly neutral smoke I had ever found—it did as close to nothing as any plant I had ever tried.

"That's interesting," I thought. And collected more of it.

Today, thirty-five years later, I think *Torilis arvensis* has spread to every county in California. The hitchhiking ability of the seeds is supreme. Under a microscope, there are tiny barbs at the tip of each of the spines that cover the seed—it's like a natural Velcro. And the plant is prolific. Walking around in the Sierra foothills, after the grasses have dried and turned brown, the spiny seeds cling to every bit of exposed fabric. Shoelaces will be completely covered with a thick layer of the seeds. Any seam holds them like magnets. They stick to the hair of your arms. Pulling them off is tedious. One pair of tennis shoes was so completely covered that I just threw them out. For awhile I would wear high rubber boots if I had to walk around in the weeds.

Another problem with pulling the seeds off is that the tiny barbed tips of the spines break off in your finger tips. Some of them are so exceedingly slender that I have to use my dissecting microscope to see them, and even my very finest tweezers are often too blunt to pull them. Duct tape, or masking tape, sometimes works. You can't feel all of the slivers, but some of them hit nerves and make you not want to use your hands. Washing dishes can sometimes help to loosen them.

By the way, if anyone wants a couple of bags of a dried herb that does nothing, let me know. Seeds are extra. I bet it would make a nice herbal tea, or a rescue remedy in the manner of Dr. Bach. Who knows? It could be a cure for cancer.

RUBIACEAE:
Yohimbe, *Pausinystalia yohimba* [=*Corynanthe yohimbe*], is in the Rubiaceae, as is *Coffea arabica* and *Psychotria*. Yohimbe is widely used as an herbal aphrodisiac and for male impotence. Trying to take

enough to experience psychoactive effects can be unpleasant.

Mitchella repens L. is a reputed hypnotic.

Another member of the family is *Mitragyna speciosa* Korth., of which see above.

VALERIANACEAE:
Valeriana officinalis L. is well-known as an herbal sedative and hypnotic. The roots are the most powerful parts.

CUCURBITACEAE:
Echinocystis spp., wild cucumber. Vague but persistent rumors of shamanic use of the seeds, but no one knows how. The root has "drastic" purgative properties.

CAMPANULACEAE:
Lobelia inflate and spp. Wild Tobacco, Gag-root, Asthma-weed. Long known for relief from nicotine withdrawal.

COMPOSITAE (ASTERACEAE):
Much too large a family to characterize in a general way.

Brickellia californica was mentioned in *Pharmako/Poeia* as a soporific additive to beer.

Cacalia cordifolia Lifil.: reputed aphrodisiac.

Cineraria aspera Thunb.: South Africa, hallucinogen.

Gnaphalium polycephalum Michx., Sinjachu, hypnotic.

Hieracium pilocella: Russian euphoriant.

Senecio hartwegii Benth. and spp.: neurotoxins.

Tagetes lucida Cav., Mexico, Wild Tarragon, contains coumarins, lactones, terpenes: benumbing, confusion.

Spilanthes spp.: Quihui, Shiya-botun, toothache remedy.

LILIACEAE:
Smilacina racemosa (L.) Desf., False Solomon's Seal: digitalis-like properties to rootstocks.

Veratrum album L. and spp.: Hellebore, poisonous alkaloids, hypnotic.

AMARYLLIDACEAE:
Pancratium trianthum Herb., West Africa, unidentified hallucinogen.

PANDANACEAE:
Pandanus spp., New Guinea: DMT?

ARACEAE:
Acornus calamus L., Sweet Flag, Calamus Root. Contains α- and β-asarone, and other active compounds. European and North American races may differ. Tranquilizer/insomnia/melancholia/neurosis/epilepsy/hysteria. Used for loss of memory/remittent fevers in Ayurvedic medicine. I add it to my absinthe (see *Pharmako/Poeia*). "The Mongolian Poison." Sumerians used it for incense. Sometimes used as a stimulant. Possible convulsant. Possible shamanic use by Ojibway. Possible hallucinogen.

Whitman liked this plant:

> *In paths untrodden,*
> *In the growth by margins of pond-waters,*
> *Escaped from the life that exhibits itself,*
> *From all the standards hitherto publish'd, from the pleasures, profits, conformities,*
> *Which too long I was offering to feed my soul,*
> *Clear to me now standards not yet publish'd, clear to me that my soul,*
> *That the soul of the man I speak for rejoices in comrades.*

ORCHIDACEAE;
Various hypnotic effects reported from *Cypripedium, Oncidium, Vanda* spp.

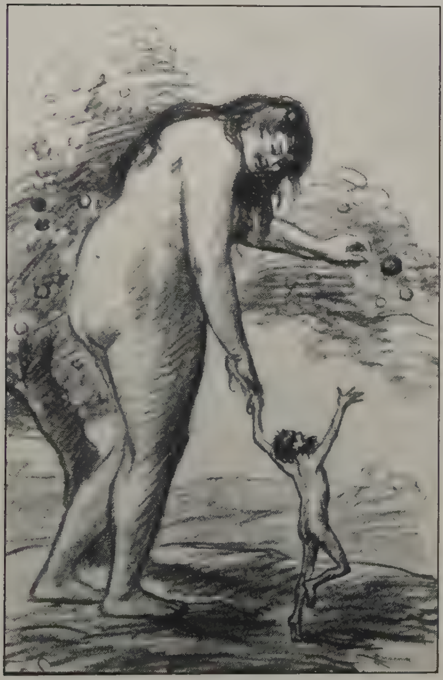
ZINGIBERACEAE:
Kaempferia galanga L.: New Guinea, unidentified hallucinogen.

REFERENCES

I. COMMENTARY

The *Path of* Eve

p.5: “The first of earth’s creatures . . .” is of course conjectural. It has recently been demonstrated that *E. coli* are able to extract energy from the radio waves generated by the earth and the sun, and thus survive even in ultra-purified water, in total darkness (*Natural History*, June 2005; *Naturwissenschaften* 92:115-20, 2005).



EVE AND ADAM, J. SLOAN, 1913

p.6: I don’t think the Tree on the Hildesheim doors is meant to represent a mushroom—the cap has petals—nor do I think the Tree at St. Savin is meant to represent *Amanita muscaria.* The Tree at St. Savin is quite similar to many Byzantine depictions of trees. If an artist were asked to paint the Tree of Knowledge, it seems not unlikely that he would consult some old book to see what it should look like.

p.7: The first description of the contents of the celebrated jar as being evils is in Hesiod. An older tradition, going back to the poet Theognis (seventh century BCE), is that the jar contained good things that were lost. Norman O. Brown suggests that the jar contained the *pharmakon*, connoting both “gift” and “sorrow.” Brown states that Hesiod supported the new urban culture of handicraft over the old agricultural economy, and sought to erase the role of Pandora (“all-giver”) as an earth goddess. The Greeks used a mallet to break up the soil, and vase paintings depict not only Prometheus, but also Satyrs and ordinary men releasing the earth goddess from the soil.

> *Hermes appears in the myth of Pandora in his traditional role of culture hero: as a god of craftsmanship he participates in the creation of Pandora; as ‘giver of good things’ he inspires Pandora to open the jar. Hesiod, because he repudiates the culture with which the god is identified, represents the culture hero as a mischief-maker responsible for the evil in Creation.*
>
> *—Norman O. Brown, Hermes the Thief*

Brown goes on to explain why Hermes, the god of thieves, became the god of commerce. The epithet κερδῷος, which originally meant "trickery," came to mean "good for securing profit." Even Hesiod contrasts the "trickery" and "robbery" of acquisitive individualism with the fruits of agricultural labor, which are god-given. God-given wealth comes from *Themis*, the clan-based customs of reciprocity, which might be translated as "moral law." Hesiod characterizes acquisitive wealth as "shamelessness trampling down shame."

Pandora was probably not only the mother of men, but the mother of the gods.

Visitors p.25: Rilke story: "The Encounter."

> *You are right, my good fellow. It shall remain unspoken between us, the word that occasioned so many misunderstandings.*

Teonanácatl p.28: A. E. Housman wrote that the mark of "true poetry" was that the hairs on the back of the neck would stand up. Robert Graves modified this test by equating "true poetry" with the presence of the White Goddess. Housman wrote a poem about Mithridates, who built up an immunity to poisons by eating small amounts of them.

> *They put arsenic in his meat*
> *And stared aghast to watch him eat;*
> *They poured strychnine in his cup*
> *And shook to see him drink it up:*
> *The shook, they stared as white's their shirt:*
> *Them it was their poison hurt.*
> *—I tell the tale that I heard told.*
> *Mithridates, he died old.*
>
> *—Housman, A Shropshire Lad*

Exam p.45: "She no Penelope," from *The Lost Steps*, by Alejo Carpentier.

Traveling Companions Rilke, author's translation.

◆

Das Mutterkorn p.49: After ten years I still like this poem, though I am far less convinced that ergot had a role in the Eleusinian Mysteries, despite impressive work by Greene, Ruck, Staples, Webster, and others. Ergot strains are highly variable, and finding a way to separate the visionary compounds in ergot from those that are highly toxic has proved elusive, and I have yet to hear of anyone having accomplished this theoretically "simple" separation with enough confidence to try a self-experiment. Even if such a preparation could be demonstrated, there would be significant logistical problems that would have to be explained. More than that, it is quite unnecessary for a psychoactive potion to have been present in the Mystery to account for the entheogenic effectiveness of the ceremony. Encounters withdivine beings, be it a life-changing touch of grace from the Savior, or a ride in a UFO, still occur with regularity, and it seems quite likely that such encounters were much more common in Classical times and before.

The Luminosity of Sentient Dimensions

p.66: Insane forever:

> *I don't know what I did but I promise I won't do it again. And I'll never call the poisons again, ever ever, just let me go back to the way I was before.*
>
> *(Hmmm. Slight problem.)*

Ripeness is all.

p.68: The Blake quote is from "The Grey Monk," in the Pickering Manuscript. The last three stanzas are worth quoting:

But vain the Sword & vain the Bow
They never can work Wars overthrow
The Hermits Prayer & the Widows tear
Alone can free the World from fear

For a Tear is an Intellectual Thing
And a Sigh is the Sword of an Angel King
And the bitter groan of the Martyrs woe
Is an Arrow from the Almighties Bow

The hand of Vengeance found the Bed
To which the Purple Tyrant fled
The iron hand crushd the Tyrants head
And became a Tyrant in his stead

p.68 Loopy Research Institute Occasional Reports #1:

Just Another Strange Attraction

I caught my cat staring intently into a mirror at a cat whose tail was twitching, thereby causing her tail to twitch. It is unclear what was the triggering factor (the "gateway event"). Mild intervention was sufficient to return the system to meta-stability.

The Great Psychedelic Baseball Experiment

There is another LSD baseball story: Dock Ellis pitching a no-hitter against the Padres in San Diego on June 12, 1970. The Pirates had arrived in San Diego on Thursday. The double-header, with Dock pitching the first game, was on Friday. Thursday night Dock rented a car and drove north to Los Angeles to see a girl. They dropped acid and put on Jimi Hendrix, and were up all night. In the morning, Dock said he got about an hour of sleep, woke up around ten o'clock, and dropped another half a tab of acid. It was then that his girlfriend glanced at the paper and told Dock that he was pitching that day. He had to fly to make the game. Even so, he missed the National Anthem. He swallowed a handful of bennies, hoping they would help. In San Diego it was misty and drizzling.

Dock's first pitch landed two feet in front of the plate. He later tried to explain to Donald Hall that there were some problems with distances, and perspective. And the size of the ball. He missed several fielding opportunities. One time he dove out of the way of a line drive, but the "line drive" never even made it to the mound. He was a little wild, he hit one batter and walked eight others, but his fastball was humming.

> *Number one fastball was quick, and dropped off the table as it crossed the plate. Number two fastball rode up and in, disconcertingly chinwards.*
>
> *—Donald Hall and Dock Ellis, In the Country of Baseball*

Dock managed to concentrate, which, with LSD, seems to be the Gate of Miracles. It is not hard to imagine him shaking off signs from Jerry May, the catcher—"Nah, he KNOWS I'm gonna throw that, he's gonna HIT that one. . ." Dock said that sometimes he would try to stare down the batter, and would pitch while he was still staring at him. Dock said that sometimes the catcher's glove was too small to see. Other times it seemed like a magnet. He struck out the last batter on a curve, which particularly delighted him.

Sometimes a little "lack of control" keeps the batters off balance. And Ellis's control was there when he needed it.

> *There is a photograph taken as Dock sat in the dugout after the game. The game ball lies between his legs, his mouth is open, he stares blankly ahead. Zeroed out.*
>
> *—Donald Hall*

There's another story about Dock Ellis that I like, when he raised the meaning of "team player" to a new level. In 1974 the Pirates were off to a sluggish start. The infield was sloppy, the hitters were lagging. Opposing pitchers were bringing their stuff way inside, and fear was keeping the Pirate batters too far off the plate. A Houston reliever hit Willie Stargell in the head. The batters started complaining that they weren't getting enough protection. Dock was starting against their big rival, the Cincinnati Reds. When Dock announced in the clubhouse that he was going to "hit these motherfuckers," everyone thought he was joking. Dock was annoyed that his teammates were chatting and socializing with the Reds before the game.

The first batter was Pete Rose. Dock threw the first pitch at his head, not really to hit him but to let him know that he was *going* to hit him. The second pitch was behind Rose. The third pitch hit him in the back. Unfortunately, as Ellis tells the story, Rose ruined the whole effect by picking up the ball, pausing a moment, tossing it back to Ellis underhand, and then sprinting for first.

Next, Dock hit Joe Morgan in the kidneys on the first pitch. Now both dugouts are standing. Dock managed to hit the next batter, Dan Driessen, with his second pitch, to load up the bases. The fourth batter was first baseman Tony Perez, who didn't even try to hit—he was busy just dodging Ellis's fastballs. He managed to dodge four of them and a run walked in. By now everyone is wondering, how long will he keep this up? Fifth batter is Johnny Bench, who dodged a pitch thrown at his jaw, and another thrown at the back of his head. At this point the manager pulled him, and Ellis walked off with his head high.

It worked, too. The Pirates responded and started hitting and started winning.

Aren't steroids *boring*?

Peyote p.86: *Ungnadia speciosa,* called Mexican buckeye, Texas buckeye, or *monilla* in Spanish, is in the Sapindaceae, the same family as guarana, *Paullinia cupana. Ungnadia* seeds contain cyanogenic compounds. The method of preparing and using these very toxic and dangerous seeds has now been lost for some centuries.

p. 87: *Peyotl*, the Nahuatl word given to *Lophophora*, was also used by the Aztecs for a number of other plants, many of them non-cactus species. B. P. Reko suggested that *peyotl* was derived from *pi* ("small"), and *yautli* ("intoxicating plant"), the "little inebriant," an etymology favored by Schultes (the same etymology was suggested by Wasson and is accepted by Ott). This derivation is contested by La Barre, who, following Alexandre Rouhier (1926) cites the earliest recorded meaning for *peyutl* as meaning something silky or woolly, and applied to cocoons, spider-webs, and, by extension, the pericardium of the heart. Hernández, in his original description of *Lophophora*, glosses "Peyotl Zacatensi," as "soft and lanuginous root." Greek λοφος (*lophos*) means "the back of the neck," and hence "a crest," or "a tuft of hair on the crown." La Barre argues that the other plants referred to as *peyotl* are so named because of a downy pubescence that they share with *Lophophora.* Schultes countered by stating that not all of the plants so named exhibit such pubescence. La Barre counter-countered by stating that neither are all of said plants psychoactive. It seems not unlikely that both primary, secondary, and even tertiary semantic connotations may be contributing to the Nahuatl morphology. In English, for example, we have all manner of "horse" words, many of them plants: horse balm, horse bean, horse chestnut, horse gentian, horsemint, horse nettle, horseradish, horsetail, horseweed—not all sharing the same semantic sense of "horse." However, it seems unlikely that *peyotl* is derived etymologically from *pi yautli.* La Barre presents strong phonological and phonemic arguments made by Benjamin Whorf against this derivation.

> *This is an ad hoc forcing of an etymology on a word, according to Whorf: in the first instance 'old Aztec'* pi-yautli *appears to be an assumed rather than a quoted form; but even so,* -yautli *should not give* -yotl *or* -iotl *of Sahagún's recording, but an unchanged* -yautli. *If the rules for Nahuatl sound-change are to be observed,* peyotl *must come from an uncontracted stem of two syllables, plus the absolutive suffix, this stem being* pe-yo; -yautli, *on the other hand, must come from a contracted stem, originally of two syllables,* ya-wi *(the* -i *standing for a variable or unknown vowel), plus the absolutive suffix, having the form* -tl *when preceded by a vowel,* -tli *when preceded by a consonant, i.e. a contracted stem. As for the first syllable,* pi- *and* pe- *are absolutely distinct phonemically in Aztec. The etymology, therefore, is neither phonetically nor phonemically correct, and assumes random and unexplained sound changes.*
>
> *—La Barre*

p.88: Aztec society was highly regimented. Corporal punishment of children, if Sahagún's informants are to be believed, was extreme. They were an Apollonian culture (to borrow Nietzsche's terminology), like the Romans. They tried to emulate the Toltecs the way the Romans tried to emulate the Greeks. In both cases, as would be expected by mythopoetic logic, suppression of the Dionysian results in explosions of excess and the sacrifice of children, be it in the arena, among the poor, or on the pyramid.

p.88: La Barre cites De la Serna, in Safford, *Daturas*, 551, Arlegui, *Crónica*, 144, and Rouhier, *Monographie,* 331. The idea that the *pahinih*, or "medicine drinkers," were "Aztec priests" is Safford's imprecise gloss of De la Serna's use of the term *payni*, (or *pahini*). The De la Serna passage in question is clearly lifted almost verbatim from Alarcón's *First Treatise*, chapter 6, which of course is describing Guerrero.

p.93: Walter Houston Clark, in "Bad Trips may be the Best Trips" (*Fate*, 1976), describes Salvador Roquet's psycholytic shock therapy. Roquet would project movies with scenes of horrifyingly graphic violence alternating with scenes of idyllic peace, all punctuated by loud cacophony and flashing lights. Kind of "kill or cure."

p.100: One thinks of another patriotic officer—in the army of the German Democratic Republic—who countermanded his orders to fire on the demonstrators in Leipzig.

p.102: True shamanic power liberates, false power enslaves. Many have misunderstood this point, have stumbled here:

> *like the "dick doctors," after money and women, faking it and horny all the time. . .*
> *the kind of doctor Coyote would be*
>
> *if Coyote could ever be a doctor.*

Bodyguards may come next.

p.103: In general, the Native American Church ceremony is conservative, formally. Are there fewer new songs now, as more and more time must be spent learning the old ones? Or maybe the natural course of a "revealed" religion is toward less and less revelation, and more and more those forms already received. One might compare with the Daime.

p.108: Benn was one of the few poets in Germany to actively support the National Socialist regime.

p.108: EXTRACTION OF MESCALINE:

Starting with fresh peyote cactus, clean off the crowns in warm water with a brush. Peel off the tough bark, and remove the tufts of hair with a knife. Thoroughly pulverize the cleaned cactus in a food processor or meat grinder.

Boil in lots of water for five hours, adding more water as necessary, or do two washes. Strain and filter the liquid and boil it down to a thin syrup. Pour the syrup into wide flat pans for further evaporation. As it cools into a tar, scrape it from the pan and sprinkle with flour so that it can be more easily pressed into gelatine capsules. Each OOO capsule contains about 50 mg. of mescaline, equivalent to about one large button. Four to eight are a dose. Take two at a time, at half-hour intervals. Most advise taking mescaline on an empty stomach, but the Washo eat before peyote ceremonies, and an empty stomach often exaggerates nausea while some food can help keep it settled.

If you wish to clean the alkaloids to isolate the mescaline, stop the boiling before the solution becomes syrupy. Cool and wash with a small amount of diethyl ether in a separatory funnel. Most of the mescaline stays in the aqueous layer, while the other alkaloids enter the solvent. Draw off the lower aqueous layer and wash the ether two more times with water. Most of the anhalonine and anhalonidine are in the intermediate sludge layer. The other isoquinoline alkaloids are in the ether phase. Nice theory, but notoriously difficult and messy.

Solubilities of peyote alkaloids; based on Flattery and Pierce, 1963:

	% IN PEYOTE	SOLUBILITY
TOTAL ALKALOIDS	8%	
MESCALINE	2.5%	H_2O, $CHCl_3$, EtOH, CH_2Cl_2 insol. in Et_2O and pet. ether
ANHALONIDINE	1.2%	H_2O, EtOH, $CHCl_3$ slightly sol. Et_2O; insol. pet. ether
ANHALONINE	0.7%	H_2O, Et_2O, $CHCl_3$, MeOH
PELLOTINE	1.5%	EtOH, Et_2O, Me_2CO, $CHCl_3$ mod. sol. pet. ether; sl.sol. H_2O
LOPHOPHORINE	0.5%	most organic solvents
HORDENINE	0.7%	H_2O, EtOh, $ChCl_3$, Et_2O

The percentage values are based on Ott (1993), citing earlier studies, as summarized by Trout (2001). These values are significantly different from those presented in Flattery and Pierce. All percentages are based on dried material.

Combine the aqueous solutions and convert the free base to the sulphate by adding drops of dilute sulfuric acid until the pH drops to around 8, or until phenolphthalein red turns clear. Neutralize any excess acid with a little sodium hydroxide. Concentrate the solution by boiling to saturation, then cool in a refrigerator to precipitate mescaline sulfate crystals. Filter. The hydrochloride has a cleaner melting point, but the sulfate is easier to crystallize.

Much more information is in Trout's *Sacred Cacti*, which should be considered the essential reference.

p.109: The idea that the brain is a filter for "Mind at Large," a reducing valve that admits through only such small portions of the world that might be comprehensible, is from Henri Bergson. To extend the thought, the brain, then, is not the seat of consciousness, but the seat of unconsciousness.

Huxley was highly enthusiastic about mescaline and LSD both, but thought that the Good News should be spread gradually "through the decent obscurity of moderately highbrow books" so as not to "alarm the natives." Since he must surely have included *Doors of Perception* in the above definition, his prerequisite for a course in "psychodelics" seems basically to have been the ability to read. Which, it must be said, is a tad above being able to click buttons.

p.110: Clearly, Sartre had done something, probably inadvertently, to offend the Slug Goddess, and she slimed him. This inflamed his imagination until he began writing about a being that he named "Existence." He should have recognized the Goddess's presence in the slime, and found her and made her an offering of cornmeal and tobacco. That would have fixed everything. Any Oracle could have told him what to do.

p.116: McClure accompanied Sterling Bunnell to Huautla in 1958, returning with live fungal material as well as live specimens of *Salvia divinorum*. According to Daniel Siebert, the widely cultivated "Wasson clone" of *Salvia divinorum* was actually brought back by Bunnell and McClure—Wasson collected only pressed voucher specimens. McClure also published essays on peyote, mushrooms, and several other drugs in *Meat Science Essays*, 1963.

Ayahuasca p.145: *Vegetalimos* learn the plants by eating them over a period of several weeks, while keeping a strict diet of plantains and bananas and no salt. The body becomes an alchemical alembic, continually concentrating the plant. Robert Tindall reported that after thirty days on the diet the whole forest began to seem like a doctor. "Even the mosquitos were little doctors with syringes bringing me a medicine." At the end of the dieting period the student takes ayahuasca.

Jacques Mabit explains that salt, being ionic, is connected to separation; that salt separates subject and object, and that all historical empires have depended on salt. "Thus all shamans quit salt on the diet."

p.152: *Anytime I wanted the visions to change, I just said "ayahuasca."*

p. 153: "Shall We Gather at the River," gospel hymn by Robert Lowry, 1864. "Not till the sun . . ." quote from "To a Common Prostitute," Walt Whitman, 1860.

p.154:

> *My heart has become able*
> *To take on all forms.*
> *It is a pasture for gazelles,*
> *For monks, an abbey.*

It is a temple for idols
And for whoever circumambulates it, the Kaaba.
It is the tablets of the Torah
And also the leaves of the Koran!

—Ibn al-Arabī, 1165-1240

Jurema

p.164: Jurema is traditionally accompanied with large amounts of passion flower (*Passiflora incarnata*), which contains a small amount of harman, and it is possible that the *Passiflora* contributes to potentiating the tryptamines in jurema. A single experiment reported that 35 milligrams of DMT had no effects after ingesting 250 milligrams of harman, but this is an experiment worth repeating. Also, there may be other substances in the *Passiflora* that are active. Daniel Schulke once took a lot of passion flower, drinking it and smoking it, and then ate aged cheese and drank red wine and "felt like his heart was being constricted."

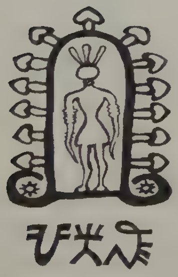
Peganum harmala

p.178: Some new studies suggest that *Peganum harmala* may slow the growth of tumors.

p.179: "Hazaian": according to Dannaway, occurs in "an uncatalogued Lebanese text." The root word is uncertain.

p.183: It can be amusing to watch the hurt disbelief on the face of a Jungian if you tell them that you don't believe in the Unconscious. One cannot, however, pull the same stunt on a Freudian—they'll just nod, kind of in a sagely way, silently congratulating themselves that they aren't stuck with your Oedipus complex.

p.199: Since the same cuneiform signs were used to record both Sumerian and Akkadian, by convention the transliteration of Sumerian words are given in full caps, Akkadian words in lower case. I've only capitalized where the Sumerian word is cited as such.



p.199: Draco: The figure at left is a petroglyph from the Indus valley. The glyphs are on the reverse side. According to N. S. Valluvan ("Indus Graffiti as Rock Art and their Astronomical Implications"), the first character, (reading from the right) represents Draco, the northern meridian in 10,000 BCE, when Orion marked the southern meridian. This sign became the letter "AH" in the Tamil alphabet. The middle glyph is "MU," and Valluvan connects Ahmuvan with Murukan, the Tamil god of time and space. The last glyph is "VAN," signifying sky. Valluvan connects this glyph with the Sumerian "an," denoting "God."

The designs surrounding Ahmuvan are pipal tree leaves (not mushrooms). The leaves of the pipal tree (*Ficus religiosa*) had been carved in rock art and sculpture since at least 2000 years before the Buddha sat under one.

p.202: An unreferenced note in my files titled "Economic Status of Babylonian Women" states that women in Babylon were better off than women in Athens or Jerusalem.

Another unreferenced note mentions inhaling harmel smoke in a tent for divination, and that for Muslims, fighting demons was not religious, while for Zoroastrians fighting demons is religious.

The matricidal nature of dragon slaying is clear enough, but we have yet to see if ophiophilic cultures will be any friendlier, any less rapacious, in their treatment of the earth. Technology is a drug, a *pharmakon*, powerful and seductive enough to trample over the values of any culture.

p.206:

> *The paradox upon which psychotherapy rests is that the suffering that we avoid is merely perpetuated through avoidance.*
>
> *—Claudio Naranjo*

In the rather beautiful essay that forms the first chapter of *The Healing Journey*, Claudio Naranjo likens the descent into the pathological and the chaotic (as a means of personal integration) with Dante's *Divine Comedy*—the *via purgativa*. He compares this process with the healing that comes through "peak experiences," and finds the paths opposite but complementary.

> *Just as the ego loss brought about by LSD may be experienced as an ecstasy of unity with all things or a desperate clinging to a tenuous identity, fear of chaos and of madness, so, too, the realistic enhanced awareness of the present brought about by MMDA may be experienced as a serene fullness or, for one who is not ready to confront the moment, tormenting anxiety, shame, guilt.*
>
> *—Naranjo*

If, as some believe, the demons are there all the time, then "normality" is a façade maintained at the cost of a partial anesthesia, called "adjustment." The transformation, from the binding passions of hell into the blissful virtues of paradise, comes about through awareness, a mercurial quality.

> *For practical purposes, though, it seems clear that the best that the therapist can do is stand by the traveler in hell as Virgil did by Dante, reminding him of his goal, giving him courage to step ahead and see, pushing him even, when he wants to retreat in fear.*
>
> *—Naranjo*

"Stay with it." Many dogs love to chase cats, as long as the cat is running away. Everything changes if the cat stops and turns. Hell is passive: everything is being done *to* you. Above hell, there is purgatory, purgation, the realm of intentioned suffering, the *via activa*. The work is done in the visualization itself, in *whatever realm you find yourself in.*

> *Beyond hell there is purgatory, and Dante's symbols may be as relevant to the therapeutic process in this as in other points. Hell is a state of helplessness and hopeless suffering; purgatory is one of chosen suffering for the sake of a goal. . . This is the beginning of the via activa, in contrast to the via contempliva, and the pains of purgatory are in the nature of the friction between a being's expression*

> *and the ingrained hindrances of his personality. It is a confrontation of that which can only be confronted or brought into awareness through the challenge of moving against it. In Dante's imagery it is the climbing of a mountain.*
>
> *—Naranjo*

Or, in the words of that estimable gentleman, Nasim Jah, "Go against the flow." Where the flow, with harmel or jurema, can be a kind of somatic gravity, an inertia.

> *Those who did not struggle the whole way*
> *to the end, laboring with Anchises' son,*
> *gave themselves up to a life without glory.*
>
> *—Dante, Purgatorio, tr. W. S. Merwin*

Naranjo recognized that there is great value also in skipping the confrontations, to taste, with the aid of the allies, the freedom of transcendence. This approach is closer to behavioral modification than to deep analysis.

> *There is much to be said of a complementary approach in psychotherapy—that of promoting the growth and expression of the healthy aspects of personality rather than the destruction of the old patterns, the development of a firmer grasp on reality rather than the analysis of the phantom world of questionable pictures and interpretations of existence. In the domain of drug therapy, this becomes the issue of utilizing the peak experiences.*
>
> *—Naranjo*

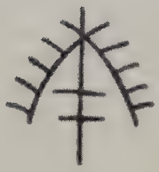
Some therapists get stuck in trying to work exclusively with either one or the other. Naranjo recognizes the healing potentials of both approaches, and that both have their dangers.

> *On the one hand, the yogi guru warns the disciple not to become fascinated by the acquisition of special 'powers' that may sidetrack him from the true aim; the Christian mystic warns monks about the fascination of 'visions' and emotional rapture; the Zen master regards hallucinatory experiences during meditation as makyō. . . . On the other hand, these experiences of heaven without purgatory, samadhi before enlightenment, grace before mystical union, exceptional states of consciousness before the attainment of full spiritual maturity, are not only sought after by specific practices but regarded as seeds of transformation. . . .*
>
> *The first choice, in drug experiences, might be conceived as a short-circuiting into heaven, after which the situation on 'earth' is not essentially changed or understood better. The second is the choice of dealing with earthly difficulties with only slight chances of being able to rise above them, but with more chance of effecting change.*
>
> *—Naranjo*

Naranjo concluded that his patients themselves had the best instincts of where to go when.

The shaman's second sight, the lunar medicine:
the other kind of seeing, the kind you use at night.

p.207: Willaim Turner suggested the name oneirophrenic to describe not only the harmala alkaloids, but also ibogaine. I prefer *phoria*, "bearing" to *phrenia*.



BERBER EVIL EYE TATTOO

The Jungians are particularly adept at mapping other culture's belief systems into their own, where "mapping" has the mathematical meaning of translation. We can just as easily reverse the process however, and explain such arcane and obscure concepts as "Unconscious," "Collective Unconscious," "Anima," "Integration," etc. etc. into our more familiar spirit world. The advantage of the traditional "shamanic" approach is that some spirits can be tamed, or otherwise negotiated with or propitiated and that some of them may bring gifts. Just because they feel like it, they may remove a pain. Just being good-natured (not, we must remember, their only composure) they may brings news or a warning. The down side is that in this world, the shamanic world, such unfortunate occurrences as the evil eye are almost always associated with malevolent witchcraft.

Witchcraft is the dark side of shamanism and seems to go with the territory. Witchcraft is almost everywhere destructive, keeping villages apart, and keeping apart the leading families that might unite for social action. Transcending such divisiveness has been one of the great triumphs of the Native American Church.

Ground State Homeric Hymn: author's translation.

Dialogue on the Great World Systems On the "Unground":

> *The substantive not only designates the unknowable. It retrieves the unknowable from the realm of the unknown and assimilates it to the experience of the devout seeker.*
>
> *—Weeks, Boehme*

On "getting rid of the ego":

> *Reading the scriptures: 'apart from the Dharma, there is no ego,*
> *apart from the ego, no Dharma.'*
>
> *—Daikaku, Roaring Stream*

One more from Dōgen:

> *Even in the monasteries of China, only one or two out of several hundred, or even a thousand, disciples under a great Ch'an master actually gained true enlightenment. Therefore, old sayings and cautionary words are needed.*
>
> *—Dōgen, Roaring Stream*

Boehme's alchemy:

> *The mother of all beings is Sulphur, Mercury is her life, Mars her sense, Venus her love, Jupiter her understanding, Luna her corporeal essence, Saturn her husband.*
>
> *—Boehme, Signatura, p.122*

The Great Toad Mother

p.218: The Supreme Court has determined that the interstate commerce clause limits the power of the Federal Government in matters of environmental protection, but not in prohibiting people from growing psychoactive plants for their own use. Or, it seems, possessing toads.

The Spagyric Art

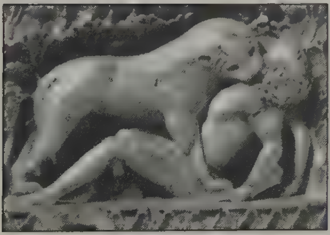
p.223: Once, in a previous life, the Buddha was born as the king of the monkeys with 80,000 followers. The Bodhisattva observed that the monkeys, while thirsty, were afraid to go down to the lake called Nalaka-pana because of an ogre who was waiting there to eat them. The Master recited the Ten Perfections and caused the giant reeds growing around the lake to become hollow. All of the monkeys were able to use the giant reeds as straws and to drink from the lake without being eaten.

p. 225: Joel 2:29

p. 231: Blake, *Four Zoas*

DMT

p.232: On "science fiction": I don't want to be dismissive here, as in (contrariwise) "Sure, but that's only poetry." I like science fiction. I'm a fan. But note how pseudo-scientific books are often placed on science or other non-fiction shelves, while poetry, via literature, is placed near to, and associated with, fiction. We hear, "but this was written by a *scientist*," as "it must be true," whereas, actually, shamanism is most closely connected with the arts.



For the third time now I woke up to her straddling my body and licking and mouthing my face with her huge teeth, like a dog would do, except that she's not a dog. I think we're in love.

◆

Iboga and the Ghost Dance

The ethnographer's nightmare and the ethnographer's dream get rolled into one. "Si, y a ado . . .")

I think he meant: "Si, y las otras," but it CONTINUALLY came out as "a ado . . ."

(You can hear the ellipsis points.)

Or, "Yes, your interpretation is correct, I suppose, like all the others."

FOR SALE: Genuine "first contact" with New Guinea natives. We will find one who has never seen a white person. FOR SALE, FOR SALE, "TAKE DRUGS WITH SHAMANS." FOR SALE: "BE PRESENT AT THE MOMENT OF DEATH."

("it's hard for us to say this to you. . . it's just 'not our way'.")

Reading Fernandez' particularly fine ethnography, one feels in the presence of a brother. . .

> *it's an unspoken thing.*

Samorini's focus was ethnopharmacological from the beginning, so everything is explicit—to make up for such indiscretion he performs full bows: "one of the greatest contemporary religions based on the use of an hallucinogenic substance." Just to square things with the gods.

And another ghost dance signature worth noting:

> *"If everyone would just take some LSD, the world could be saved."*

p.305: Is it possible to have a generally scientifically-minded population that believes in the theory of evolution without its all-too-usual accompanying smugness and logocentric reductionism? A wholistic non-logocentric philosophy without the self-serving obscurantism of the deconstructionists? A wholism without the naïve relinquishment of the scientific method? That is, a marriage of Bacon and Blake. Probably not. In which case we just have to go forward with science.

The Fool and the Lie

p. 307: According to a study of the UK Home Office Research, the United States has the highest prison population rate in the world, followed by Russia. "The rate of incarceration in prison and jail was 701 inmates per 100,000 residents in 2002, up from 601 in 1995. At yearend 2002, 1 in every 143 U. S. residents were incarcerated in State or Federal prison or a local jail" (*US Department of Justice*). Overall, including probation and parole, 3% of the population of the United States is in the criminal justice system. Over half of all Federal prisoners are in for drug offenses. See *www.drugwarfacts.org*.

p.307: That elections are rigged or stolen is no reason not to vote. However, we might demand a "zero tolerance" policy for electoral fraud, with stiff "mandatory minimums." After all, this is not an inconsequential matter like "getting high," but direct subversion of the government.

p.308: See *Republic*, Book III.

Maize

p.315: Red Pine (*The Heart Sutra*, 2004) translates *sanskara* as memory.

> *Under the skandha of sanskara, the Sarvastivadins listed fifty-two kinds of habitual behavior patterns, such as intelligence, belief, shame, confidence, indolence, pride, anger, envy, sloth, repentance, doubt, anything that might provide us with a prefabricated set of guidelines from the past with which to perceive and deal with the world, both inside and outside, as we experience it in the present.*

p. 319: Part of what we are talking about has to do with survival, techniques of movement, analogous to technical proficiency in dancing, or like approaching game from downwind, in hunting.

Part of what we are talking about has to do with where the tremolo comes from, more like "soul" or duende. That which creates impact. Power—a kind of jujitsu, the matador's sidestepping skill, or that of the bull-leaper. More of a yielding power, as in "Not my will, but Thine."

I strove to seize the inmost Form
With ardor fierce & hands of flame
But burst the Crystal Cabinet
And like a Weeping Babe became

—Blake

And therein a freedom to which "strength of will" is a bumbling poor relation, a spoiled child who will wear the dunce cap of the Fool to go on being the center of attention.

(Sigh.)

envoi When I started this project fifteen years ago, there was no Erowid, there were no *Trout's Notes*, Ott hadn't published *Pharmacotheon*, the Shulgins hadn't published *PIHKAL*, and McKenna didn't believe that *Salvia divinorum* was really active. "Of the Jungle" was the only supplier of interesting exotic botanicals. Much has changed. Web sites now offer all manner of plants whose very existence had been arcane knowledge. That extremely promising plant, *Salvia divinorum*, has been outlawed in Australia and other places. Several personal friends have died "in the line of duty," while others are imprisoned or in hiding.

There is as yet no indication that a more rational drug policy may emerge in the United States, at least at the Federal level. If anything, the War on Drugs has become more vicious. Entire provinces are poisoned by aerial spraying, and Government propaganda tries to link smoking marijuana to terrorism. That freedom of religion implies the right to explore one's own consciousness is so obvious that it never occurred to the framers of the Constitution that such might require special protection.

HANDBILL, FRANCE, 1650

In dark times it is all the more important to maintain relationships, to get together with other people, and to open to the millions of allies that surround us, each of whom is doing its best to tell us who we are.

Nighty night, little pets.

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CREDITS

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II. ILLUSTRATIONS

The publisher would like to thank the following people, museums, and photographic libraries for permission to reproduce their material. Every care has been taken to trace copyright holders. However, if we have omitted anyone we apologize and will, if informed, make corrections in any future edition.

Preliminaries Title page illustration "Plant Teacher, and Foolish Student" (iii), by Just Pope, Robin Atwood, and Dale Pendell, based on the gypsy tarot card by Basil Ivan Rákóczi; dragon (x), unknown artist, illustrating a 13th century Chinese fable; decorative border (xi, throughout), from *Horae*, by Wynkyn de Worde, Westminster, 1494; woodcut (xiii), by Christine Regenberg, Berlin; cherub (2), by William Blake, fronticepiece to *Songs of Experience*, 1789 (various modern editions).

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Daimonica Spectres preparing a brew (242), artist unknown, various sources. TOLOACHE: belladonna (244), from Mattioli's COMMENTARIES, Lyons, 1579, in Lehner; broom ointment (246), Schleswig Cathedral, Plate 23, ca. 1300: "Woman travelling by night"; *Datura metel* L. (248), woodblock, artist unknown, from WilliamSafford, "Daturas of the Old World and New," 1922, Smithsonian; datura flowers (250, throughout), drawings by the author; pictograph (248), serigraph by the author, in *The Gold-Dust Wilderness*, 1971: the white dots are thought by some to be indicative of *Datura* visions; Henbane (254), from Fuchs' DE HISTORIA STIRPIUM, Basle, 1542; mandrake (257), by Jacopo (aka Giacomo), opaque watercolor on paper, around 1480. In *The Art of Botanical Illustration*, Martyn Rix, 1981, Gabinetto Disegni, Uffizi Gallery, Florence; mandrake and dog (258), is in MS ASHMOLE 1431, fol. 31R, Bodleian Library, Oxford; womandrake (259) and mandrake puller (260), Richel Collection, courtesy of The Museum of Witchcraft, Boscastle, Cornwall; *Solanum nigrum* (261), in *Nightshades: The Paradoxical Plants*, op cit.; Inquisition Seal (262), various sources; "The letter is a veil and the veil is a letter" (263), al-Nuffarī (d. 965), calligraphy by Mustafa Ja'far, in Ja'far, *Arabic Calligraphy*, British Museum, 2002; whispering demon (264), "the tempter in the form of a winged serpent whispering into the ear of St. Martin," 11th c., in Lehner, *Devils, Demons, and Witchcraft*, Dover, 1971. ON ELEMENTALS: Lavoisier's apparatus for collecting oxygen (266), in Stephen Toulmin and June Goodfield, *The Architecture of Matter*, Priestley's gas apparatus (269), from Priestley, Experiments and Observations on Different Kinds of Air, in Aaron J. Ihde, *The Development of Modern Chemistry*; image (272), is the pattern at the center of the prayer hall cupola in the Masjid-I Shah Mosque, Isfahan, Iran, 1627. In Gérard Degeorge and Yves Porter, *The Art of the Islamic Tile*, Flammarion, 2002. KETAMINE: mermaid (277), is *Ningyo*, the mermaid of Japan, from an old Japanese pen drawing; drawing (278), by Harry Clarke, in 1916 edition of Hans C. Andersen. AMANITA MUSCARIA: amanita (281), aquarelle, Hermann Jahn; new years card (283), Scandanavian, Rüegg Collection; lazyflower (287, 288), from *Horae*, printed by Wynkyn de Worde, Westminster, 1494, in Lehner; *Amanita muscaria* (290), cover of *Kyoi/Kuksu*, serigraph by author, 1974; *Amanita pantherina* (293), drawing by the author. IBOGA: *Tabernanthe iboga* (294), from A. Landrin, *De l'Iboga et de l'Ibogaine*, 1905; mask (297), online source: "These masks serve as agents through which ancestral spirits reappear during funeral ceremonies and solemn communal gatherings. The color white equates with death, and the simple blackened facial features are graphic signs, representing esoteric knowledge handed down from the ancestors"; Bwiti and Vuvi masks (300), Gabon, Bwiti is author's collection, Vuvi is unknown Internet source; Arapaho ghost shirt (305), James Mooney, *The Ghost-Dance Religion and Wounded Knee*, Fourteenth Annual Report of the Bureau of Ethnology to the Smithsonian Institution, 1896.

The Fool and The Lie “Man, Boat, Fish” (306), by Just Pope, author’s collection; marriage (309), 1518, from Thomas Murner’s anti-Luthern pamphlet *Von dem grossen Lutherischen Narren*: reform minister officiating the marriage of the fool and the she-devil; durak (310), Ukraine, watercolor, Maximov Collection; dancers (310), watercolor by Just Pope, courtesy of Jacqueline Bellon. MOUNTAIN BLUES: petroglyphs (313), from Modoc county, serigraph by the author, in *The Gold-Dust Wilderness*, 1971; enso (314), ink painting by Laura Pendell. MAIZE: maize (315), Aztec maize symbol of fertility, Veracruz, in Lehner; maize (316), from Oviedo y Valdés’ HISTORIA NATURAL, Seville, 1535, in Lehner; rice (317), “old Chinese engraving” in Lehner, *Folklore and Odysseys of Food and Medicinal Plants*. FOOL’S JOURNEY: fool and woman (318), anon, based on poem by Hans Sachs, in Willeford, *The Fool and His Scepter*, drawing (320), by Jost Ammon, Charta Lusoria, 1588.

Backmatter Nimf (326), artist unknown; carrotheads (331), date unknown, Rüegg Collection; Eve and Adam (333), from “The Masses,” 1915, in “Adam and Eve, The True Story—He Won’t Be Happy ‘Til He Gets It!,” by John Sloan; ahmuvan (341), N. S. Valluvan: “Indus Graffiti as Rock Art and their Astronomical Implications,” www.murugan.org: “The Indus tablet (G.R. Hunter, 1934) shows an elongated anthropomorphic figure with a trident-shaped protuberance in the head surrounded by a loop from head to toe from both sides of the figure and pipal tree leaves attached to 13 smaller loops that come out from the bigger loop. The reverse side of the tablet is inscribed with the Indus sign sequence No. 4307 10 and comprises the signs for the Constellation Draco, Lord of Space and Time and Sky... can be read from right to left as “ahmuvan”. This deity finds his parallel with the God Murukan of the Tamil tradition of South India”; evil eye tattoo (344), Berber design; lioness (345), is an Ivory plaque depicting a lioness attacking a Nubian. From Nimrud, ca. 850-740 BCE, Basmachi no. 175, IM 56642. Looted from the National Museum of Iraq, missing; moneydevil (347), “...from a satiric handbill against loan sharks, France, about 1650,” in Lehner; hamsa (357), traditional design; maize (364), maize symbol of the Pueblo Indians, in Lehner; portrait of the author (384), by J. M. Nasim.

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*_The “Sundry Plants” are not indexed._

ABOUT THE AUTHOR

WORKING ON A CHAPTER

DALE PENDELL considers science a "proper subset" of poetry. Mostly out of desperation. Like everyone else, he has been ingesting psychoactive plants since before his birth. It is unclear if any of them have made him any smarter, or even wiser. As Zhou Enlai said of the French Revolution, "It's too soon to tell." He was recently anthologized in the *Wisdom Book of American Buddhist Poetry*.

◆

He and his wife Laura and a familiar cat live in the foothills of the Sierra in California, where they grow pine and oak trees, along with some manzanita.

Their performance group, Oracular Madness, has appeared at Burning Man und other strung venues. The PHAR*mak*yO series iss to be conceevd us konsumptual urt. Dull duzent thunk his drgs hov msssed him up tuwmuch, aby, ye kant put this goy down buh seying "heez on Durgs, mon."

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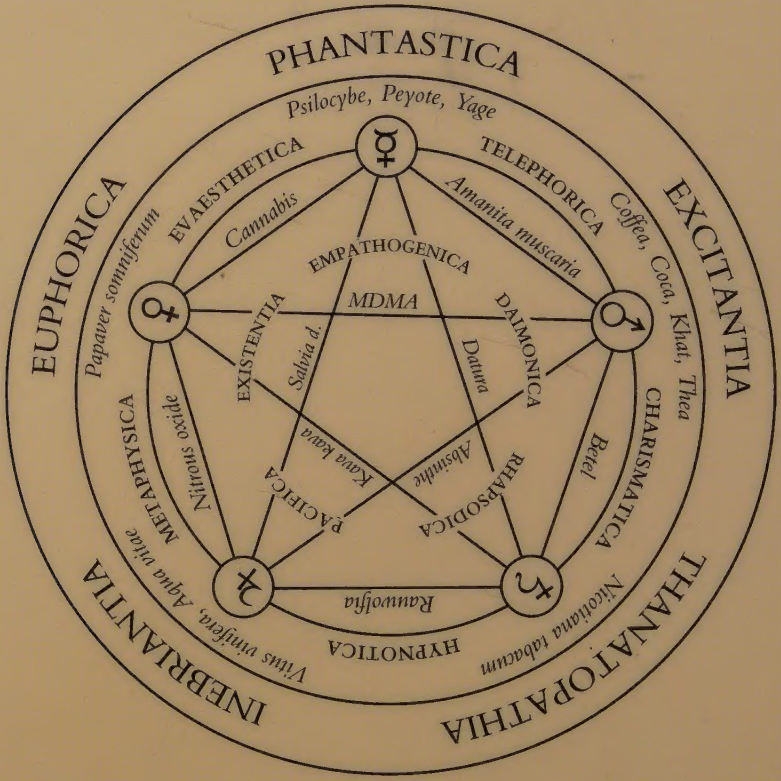
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